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# United States Department of Agriculture,

WASHINGTON, D. C., January 31, 1916.

## MONTHLY LIST OF PUBLICATIONS.

[JANUARY, 1916.]

### HOW TO SECURE PUBLICATIONS.

A copy of any of the publications listed herein, including those with price named, except the *Journal of Agricultural Research*, *Experiment Station Record*, and publications of the Weather Bureau may be obtained free upon application to the Editor and Chief of the Division of Publications, United States Department of Agriculture, Washington, D. C. as long as the department's supply lasts.

Instead of writing a letter, applicants may return this list with an "X" plainly marked on the left-hand margin opposite the publication desired, and with name and address plainly written at top or end of list.

After this department's supply of the publications listed below is exhausted, these publications of which the price is indicated can still be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C., but by purchase only, and at the prices noted herein.

Send all remittances to the Superintendent of Documents direct. His office is not a part of the Department of Agriculture.

### SPECIAL NOTICE.

An increasing number of requests for publications is being received daily in this division with incomplete addresses. Many correspondents fail to sign their names. Some do not give post-office address. Persons living in large cities fail to furnish the street address; and some give as the post-office address the name of an office that has been discontinued for years. The department is unable to handle correspondence unless the signature is legible and the post-office address given in full, with street number or rural route number, as the case may be. Correspondents are therefore earnestly requested to see that the complete address is given in all communications addressed to this department.

### FARMERS' BULLETINS.—FOR FREE DISTRIBUTION.

No price is quoted for Farmers' Bulletins for the reason that the department's supply of the current numbers is ordinarily sufficient to make it possible to send them free to all applicants.

Pecan Culture; With Special Reference to Propagation and Varieties. By C. A. Reed, Nut Culturist, Office of Horticultural and Pomological Investigations. Pp. 32, figs. 17. Contribution from the Bureau of Plant Industry. Jan. 18, 1916. (Farmers' Bulletin 700.)

Suitable for general distribution.

The Bagworm, An Injurious Shade-Tree Insect. By L. O. Howard and F. H. Chittenden. Pp. 12, figs. 13. Contribution from the Bureau of Entomology. Jan. 15, 1916. (Farmers' Bulletin 701.)

Is suitable for distribution in the southeastern portion of the United States.

Cottontail Rabbits in Relation to Trees and Farm Crops. By D. E. Lantz, Assistant Biologist. Pp. 12, figs. 5. Contribution from the Bureau of Biological Survey. Jan. 17, 1916. (Farmers' Bulletin 702.)

Discusses the distribution and habits of cottontail rabbits and methods of controlling their ravages on trees and cultivated crops by means of trapping, poisoning, and supplying safeguards. For general distribution.

Suggestions for Parcel Post Marketing. By Lewis B. Flohr, Investigator in Marketing by Parcel Post, and C. T. More, Investigator in Grades and Standards. Pp. 19, figs. 8. Contribution from the Office of Markets and Rural Organization. Jan. 14, 1916. (Farmers' Bulletin 703.)

This bulletin is written for producers and consumers in all parts of the country who are interested in marketing by parcel post.

**Grain Farming in the Corn Belt with Live Stock as a Side Line.** By Carl Vrooman, Assistant Secretary of Agriculture. Pp. 48, figs. 5. Contribution from the Office of the Secretary. Jan. 20, 1916. (Farmers' Bulletin 704.) Of especial interest to farmers in the Middle West States.

#### DEPARTMENT BULLETINS.

The publications listed below are technical or scientific treatises or bulletins applying to a special industry or locality. As long as the department's supply lasts, these bulletins will be supplied free to persons who can use such specialized information. See instructions on page 1.

**Breeding Millet and Sorgo for Drought Adaptation.** By A. C. Dillman, Physiologist, Office of Alkali and Drought Resistant Plant Investigations. Pp. 19, pls. 2. Contribution from the Bureau of Plant Industry. (Professional Paper.) Jan. 25, 1916. (Department Bulletin 291.) Price, 5 cents.

Report on results obtained in the breeding of millet and sorgo for drought-resistant varieties.

**Larch Mistletoe: Some Economic Considerations of Its Injurious Effects.** By James R. Weir, Forest Pathologist, Office of Investigations in Forest Pathology. Pp. 27, figs. 13. Contribution from the Bureau of Plant Industry. (Professional Paper.) Jan. 20, 1916. (Department Bulletin 317.) Price, 5 cents.

Describes the injurious effects of the larch mistletoe, and suggests method of control. Of interest to lumbermen and forest owners in the Pacific Northwest.

**Fermented Milks.** By L. A. Rogers, Bacteriologist in Charge of Research Laboratories, Dairy Division. Pp. 31. Contribution from the Bureau of Animal Industry. (Professional Paper.) Jan. 10, 1916. (Department Bulletin 319.) Price, 5 cents.

Gives food value and various forms of fermented milks together with a bibliography of literature on the subject.

**Farm Practice in the Cultivation of Corn.** By H. R. Cates, Scientific Assistant, Office of Farm Management. Pp. 67, figs. 40. Contribution from the Office of Farm Management, Office of the Secretary. Jan. 24, 1916. (Department Bulletin 320.) Price, 15 cents.

Gives the results of an extensive study of cultural practice with corn and should be of interest to farmers in all regions where corn is grown.

**Cost of Fencing Farms in the North Central States.** By H. N. Humphrey, Scientific Assistant. Pp. 32, pls. 5, figs. 10. Contribution from the Office of Farm Management, Office of the Secretary. Jan. 12, 1916. (Department Bulletin 321.) Price, 10 cents.

Will be of interest to farmers and students of agricultural conditions in the North Central States.

**Utilization of American Flax Straw in the Paper and Fiber-Board Industry.** By Jason L. Merrill, Paper-Plant Chemist, Paper-Plant Investigations. Pp. 24, figs. 8. Contribution from the Bureau of Plant Industry. (Professional Paper.) Jan. 7, 1916. (Department Bulletin 322.) Price, 5 cents.

Gives an account of recent work on the utilization of American seed-flax straw in the paper and fiber-board industry and will be of interest to chemists, flax farmers, counter-board manufacturers, and paper makers in general.

**The Milling of Rice and Its Mechanical and Chemical Effect Upon the Grain.** By F. B. Wise, Assistant, Office of Grain Standardization, and A. W. Broomell, Assistant Chemist, Food-Control Laboratory. Pp. 31, figs. 11. Contribution from the Bureau of Plant Industry and the Bureau of Chemistry. Jan. 8, 1916. (Department Bulletin 330.) Price, 10 cents.

Gives geographical distribution and value of the rice crop, and describes milling processes and effect of same. Of interest to importers, millers, and shippers of rice products.

**The Handling and Shipping of Fresh Cherries and Prunes from the Willamette Valley.** By H. J. Ramsey, Pomologist in Charge of Fruit Handling and Storage Investigations. Pp. 28, figs. 11. Contribution from the Bureau of Plant Industry. Jan. 10, 1916. (Department Bulletin 331.) Price, 5 cents.

Will be of interest to fruit growers in the Willamette Valley and similar sections.

**Community Production of Egyptian Cotton in the United States.** By C. S. Scofield, T. H. Kearney, C. J. Brand, O. F. Cook, and W. T. Swingle (constituting the Committee on Southwestern Cotton Culture). Pp. 30. Contribution from the Bureau of Plant Industry. Jan. 13, 1916. (Department Bulletin 332.) Price, 5 cents.

Tells how Egyptian cotton production became established in the Southwest as a result of community action, describes the present status of the industry, and gives reasons for encouraging the growing of this type of cotton.

**A Study of the Tenant Systems of Farming in the Yazoo-Mississippi Delta.** By E. A. Boeger, Agriculturist, and E. A. Goldenweiser, Statistician, Office of Farm Management. Pp. 18, figs. 5. Contribution from the Office of Farm Management, Office of the Secretary. (Professional Paper.) Jan. 13, 1916. (Department Bulletin 337.) Price, 5 cents.

Describes method of renting lands, factors of production, labor income, and landlords' profits.

**Machinery Cost of Farm Operations in Western New York.** By H. H. Mowry, Assistant Agriculturist, Office of Farm Management. Pp. 24. Contribution from the Office of Farm Management, Office of the Secretary. Jan. 18, 1916. (Department Bulletin 338.) Price, 5 cents.

Intended for general distribution.

**Farm Management Practice of Chester County, Pa.** By W. J. Spillman, Chief, Office of Farm Management, H. M. Dixon, Assistant Agriculturist, G. A. Billings, Agriculturist. Pp. 99, pls. 2, figs. 10. Contribution from the Office of Farm Management, Office of the Secretary. (Professional Paper.) Jan. 17, 1916. (Department Bulletin 341.) Price, 15 cents.

This study is based on the operations of 643 farmers in an old and prosperous agricultural section. It is designed to develop fundamental and broadly applicable principles of good management.

**The Present Status of the Pasteurization of Milk.** By S. Henry Ayers, Bacteriologist, Dairy Division. Pp. 16, fig. 1. Contribution from the Bureau of Animal Industry. (Professional Paper.) Jan. 8, 1916. (Department Bulletin 342.) Price, 5 cents.

Will be of interest to health officers, medical men, scientific dairymen, and others who may be interested in the subject of pasteurization.

**Studies on the Biology of the Arizona Wild Cotton Weevil.** By B. R. Coad, Entomological Assistant, Southern Field Crop Insect Investigations. Pp. 23, pls. 2, fig. 1. Contribution from the Bureau of Entomology. (Professional Paper.) Jan. 18, 1916. (Department Bulletin 344.) Price, 5 cents.

The investigations on which this paper is based were conducted under the direction of W. D. Hunter, in charge of Southern Field Crop Insect Investigations, and are of interest to entomologists generally.

#### MISCELLANEOUS.

**Cover Crops for Porto Rico.** By C. F. Kinman, Horticulturist. Pp. 32, pls. 8. Jan. 22, 1916. (Bulletin 19, Porto Rico Agricultural Experiment Station.) Price, 10 cents.

#### SERIALS.

**Journal of Agricultural Research.** (Issued weekly. For sale only.)

Vol. 5, No. 14. January 3, 1916. Contents: Hourly Transpiration Rate on Clear Days as Determined by Cyclic Environmental Factors. By Lyman J. Briggs and H. L. Shantz.—Effect of Natural Low Temperature on Certain Fungi and Bacteria. By H. E. Bartram. Pp. 583-655, pls., LIII-LV, figs. 22. Price, 10 cents.

Same, No. 15, January 10, 1916. Contents: Effect of Cold-Storage Temperatures upon the Mediterranean Fruit Fly. By E. A. Back and C. E. Pemberton.—Biochemical Comparisons between Mature Beef and Immature Veal. By William N. Berg. Pp. 657-711, figs. 6. Price, 10 cents.

Same, No. 16. January 17, 1916. Contents: Factors Involved in the Growth and the Pycnidium Formation of Plenodomus fuscomaculans. By George Herbert Coons.—Effect of Elemental Sulphur and of Calcium Sulphate on Certain of the Higher and Lower Forms of Plant Life. By Walter Pitz. Pp. 713-780, pl. 1. Price, 10 cents.

Same, No. 17. January 24, 1916. Contents: A Serious Disease in Forest Nurseries Caused by Peridermium filamentosum. By James R. Weir and Ernest E. Hubert.—Sweet-Potato Scurf. By L. L. Harter.—Banana as a Host Fruit of the Mediterranean Fruit Fly. By E. A. Back and C. E. Pemberton.—Effect of Controllable Variables upon the Penetration Test for Asphalts and Asphalt Cements. By Prevost Hubbard and F. P. Pritchard. Pp. 781-818, pls. LVII-LXII. Price, 10 cents.

Same, No. 18. January 31, 1916. Contents: Effects of Refrigeration upon the Larvae of Trichinella spiralis. By B. H. Ransom.—Relation Between Certain Bacterial Activities in Soils and Their Crop-Producing Power. By Percy Edgar Brown. Pp. 819-869. Price, 10 cents.

**NOTE.**—Beginning with Volume 5, THE JOURNAL OF AGRICULTURE RESEARCH will be issued weekly and distributed free *only* to the libraries of agricultural colleges and experiment stations, to large universities, technical schools, and such institutions as make suitable exchanges with the department. It will not be sent free to individuals. The Superintendent of Documents will receive subscriptions for this publication, the price being \$3.00 per year, 52 numbers.

Experiment Station Record, Vol. XXXIV, No. 1, January, 1916. E. W. Allen, Ph. D., Editor. Pp. 1-100. Price, 15 cents.

NOTE.—The Record is a technical review of the world's scientific literature pertaining to agriculture. It is not intended for general distribution, and its free distribution is restricted to persons connected with the agricultural colleges, experiment stations, and similar institutions, and to libraries and exchanges. It can not be sent free to individuals having no official connection with public institutions. The Superintendent of Documents will receive subscriptions for this publication, which is issued in two volumes a year, ten numbers each, at \$1 a volume.

The Monthly Crop Report. Vol. 2, No. 1, Jan. 31, 1916. Pp. 1-12. (Bureau of Crop Estimates.)

Contains data relating to agriculture, including estimates of acreage, conditions, yield, prices and value of crops and live stock, and the estimated number and value of live stock in the United States in 1915. For free distribution.

#### SERVICE AND REGULATORY ANNOUNCEMENTS.

These contain *only* information, instructions, and notices governing the enforcement of the food and drug act, meat inspection, 28-hour and quarantine laws, and the various regulations of the department. Issued monthly by certain bureaus. *Free distribution* is limited to persons in the employ of the department, to public officials whose duties render it necessary for them to have such information, to journals especially concerned, and to manufacturers and firms whose business is affected by same. Others desiring copies are respectfully referred to the Superintendent of Documents, Government Printing Office, who has them for sale *only*, at prices noted.

Bureau of Animal Industry. No. 104. December, 1915. Pp. 129-138. Jan. 26, 1916. Price, 5 cents.

Bureau of Chemistry. No. 16. Pp. 25-33. Jan. 26, 1916. Price, 5 cents.

Federal Horticultural Board. No. 23. December, 1915. Pp. 91-99. Jan. 29, 1916. Price, 5 cents.

Office of Markets and Rural Organization. No. 6. Pp. 32, figs. 12. Jan. 24, 1916. Price, 5 cents.

#### SOIL SURVEYS.

All requests for soil surveys are referred to the Bureau of Soils for attention, the distribution of same being controlled by that Bureau.

Soil Survey of Lawrence County, Alabama. By H. G. Lewis, of the U. S. Department of Agriculture, and J. E. Stroud, of the Alabama Department of Agriculture and Industries. Pp. 50, figs. 2, map. (From F. O. Soils, 1914.) Price, 15 cents.

Soil Survey of Limestone County, Alabama. By R. T. Avon Burke, of the U. S. Department of Agriculture, and A. M. O'Neal, Jr., of the Alabama Department of Agriculture and Industries. Pp. 41, fig. 1, map. (From F. O. Soils, 1914.) Price, 15 cents.

Soil Survey of Grundy County, Missouri. By A. T. Sweet, of the U. S. Department of Agriculture, and W. I. Watkins, of the University of Missouri. Pp. 34, pl. 2, fig. 1, map. (From F. O. Soils, 1914.) Price, 15 cents.

Soil Survey of Harrison County, Missouri. By E. S. Vanatta, of the U. S. Department of Agriculture, and E. W. Knobel, of the University of Missouri. Pp. 36, fig. 1, map. (From F. O. Soils, 1914.) Price, 15 cents.

#### PUBLICATIONS OF THE WEATHER BUREAU.

Publications of the Weather Bureau are obtainable only from the Chief of the Weather Bureau or the Superintendent of Documents, Government Printing Office, at the prices noted herein.

National Weather and Crop Bulletin, No. 32, December, 1915, reporting temperature, rainfall, and crop conditions throughout the United States. (Issued weekly, on Wednesday, April to October; monthly remainder of year.) Price, 25 cents a year.

Snow and Ice Bulletins for January 4, 11, 18, 25. These bulletins are issued weekly during the winter season, based upon data from regular Weather Bureau stations, supplemented by reports from selected cooperative observers. Price, 25 cents a year.

Jos. A. ARNOLD,  
*Editor and Chief Division of Publications.*

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# United States Department of Agriculture,

WASHINGTON, D. C., February 29, 1916.

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[FEBRUARY, 1916.]

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**The Catalpa Sphinx.** By L. O. Howard and F. H. Chittenden. Pp. 10, figs. 5. Contribution from the Bureau of Entomology. Feb. 16, 1916. (Farmers' Bulletin 705.)

Is of interest throughout the United States wherever catalpa trees occur.

**Laws Relating to Fur-Bearing Animals, 1915.** A Summary of Laws in the United States and Canada Relating to Trapping, Protection, Propagation, and Bounties. By D. E. Lantz, Assistant Biologist. Pp. 24. Contribution from the Bureau of Biological Survey. Feb. 23, 1916. (Farmers' Bulletin 706.)

For general distribution among persons interested in fur farming, trapping, and the fur trade.

**The Commercial Grading, Packing, and Shipping of Cantaloupes.** By C. T. More, Investigator in Market Grades and Standards, and G. V. Branch, Investigator in City Marketing. Pp. 23, figs. 18. Contribution from the Office of Markets and Rural Organization. Feb. 2, 1916. (Farmers' Bulletin 707.)

Should be of interest to the commercial growers and shippers of cantaloupes in all sections of the United States.

**The Leopard Moth: A Dangerous Imported Insect Enemy of Shade Trees.**

By L. O. Howard and F. H. Chittenden. Pp. 12, figs. 4. Contribution from the Bureau of Entomology. Feb. 14, 1916. (Farmers' Bulletin 708.)

Is of interest to growers of shade and ornamental trees, especially in the New England and North Atlantic States.

**Bridge Grafting of Fruit Trees.** By W. F. Fletcher, Scientific Assistant, Office of Horticultural and Pomological Investigations. Pp. 8, figs. 7. Contribution from the Bureau of Plant Industry. Feb. 21, 1916. (Farmers' Bulletin 710.)

Illustrates a method of overcoming damage done to fruit trees by rabbits, mice, insects, and careless tillage.

**DEPARTMENT BULLETINS.—TECHNICAL.**

The publications listed below are technical or scientific treatises or bulletins applying to a special industry or locality. The edition is limited, but they will be furnished free to persons who can use such specialized information as long as the supply lasts. However, to insure prompt receipt, remit price to the Superintendent of Documents.

**The Spruce and Balsam Fir Trees of the Rocky Mountain Region.** By George B. Sudworth, Dendrologist. Pp. 43, pls. 25, maps 10. Contribution from the Forest Service. (Professional Paper.) Feb. 19, 1916. (Department Bulletin 327.) Price, 20 cents.

Of service botanically or commercially for the trees described.

**Termites, or "White Ants," in the United States: Their Damage and Methods of Prevention.** By Thomas E. Snyder, M. F., Assistant in Forest Entomology, Forest Insect Investigations. Pp. 32, pls. 15, figs. 5. Contribution from the Bureau of Entomology. (Professional Paper.) Feb. 16, 1916. (Department Bulletin 333.) Price, 15 cents.

Describes habits, and shows geographical distribution, of these insects, and recommends preventive and remedial measures.

**Cereal Experiments in Maryland and Virginia.** By T. R. Stanton, Scientific Assistant, Office of Cereal Investigations. Pp. 32, figs. 6. Contribution from the Bureau of Plant Industry. Feb. 10, 1916. (Department Bulletin 336.) Price, 10 cents.

Of special interest to farmers in the States named.

**Notes on the Preoviposition Period of the House Fly, *Musca Domestica L.*** By R. H. Hutchison, Scientific Assistant. Pp. 14, fig. 1. Contribution from the Bureau of Entomology. (Professional Paper.) Feb. 5, 1916. (Department Bulletin 345.) Price, 5 cents.

Intended for entomologists and others who are interested in the extermination of house flies.

**Home Projects in Secondary Courses in Agriculture.** By H. P. Barrows, Assistant in Agricultural Education. Pp. 20. Contribution from the State Relations Service. (Professional Paper.) Feb. 21, 1916. (Department Bulletin 346.) Price, 5 cents.

Gives information regarding the home-project plan of teaching agriculture, and is of interest primarily to teachers in secondary rural schools.

**MISCELLANEOUS.****The Spring Grain Aphid or "Green Bug" in the Southwest and the Possibilities of an Outbreak in 1916.** By F. M. Webster, In Charge of Cereal and Forage Insect Investigations, Bureau of Entomology. Pp. 3, figs. 3. Feb. 5, 1916. (Circular 55, Office of the Secretary.) Price, 5 cents.
**Safe Farming.** By Bradford Knapp, Chief, Office of Extension Work in the South, States Relations Service. Pp. 16. Feb. 1, 1916. (Circular 56, Office of the Secretary.) Price, 5 cents.
**SERIALS.****Journal of Agricultural Research.** (Issued weekly. For sale only.) Vol. 5. No. 19, Feb. 7, 1916. Contents: Agglutination Test as a Means of Studying the Presence of *Bacterium abortus* in Milk. By L. H. Cooledge.—Boron: Its Absorption and Distribution in Plants and Its Effect on Growth. By F. C. Cook.—Further Studies on Peanut Leafspot. By Frederick A. Wolf.—Relation Between the Properties of Hardness and Toughness of Road-Building Rock. By Prevost Hubbard and F. H. Jackson, Jr. Pp. 871-907, fig. 1. Price, 10 cents.

**Journal of Agricultural Research**, No. 20. Feb. 14, 1916. Contents: Nitrogen Content of the Humus of Arid Soils. By Frederick J. Alway and Earl S. Bishop.—Life-History Studies of the Colorado Potato Beetle. By Pauline M. Johnson and Anita M. Ballinger.—Some Factors Influencing the Longevity of Soil Micro-organisms Subjected to Desiccation, with Special Reference to Soil Solution. By Ward Giltner and H. Virginia Langworthy.—Observations on the Life History of the Cherry Leaf Beetle. By Glenn W. Herrick and Robert Matheson.—Apparatus for Measuring the Wear of Concrete Roads. By A. T. Goldbeck. Pp. 909-954, pls. LXIII-LXVI, fig. 1. Price, 10 cents.

**Same**, No. 21. Feb. 21, 1916. Contents: Morphology and Biology of the Green Apple Aphis. By A. C. Baker and W. F. Turner.—Soilstain, or Scurf, of the Sweet Potato. By J. J. Taubenhaus. Pp. 955-1002, pls. LXVII-LXXVII, figs. 4. Price, 10 cents.

**Same**, No. 22. Feb. 28, 1916. Contents: An Asiatic Species of *Gymnosporangium* Established in Oregon. By H. S. Jackson.—Relation of Stomatal Movement to Infection by *Cercospora beticola*. By Venus W. Pool and M. B. McKay.—A Method of Correcting for Soil Heterogeneity in Variety Tests. By Frank M. Surface and Raymond Pearl. Pp. 1003-1050, pl. LXXVIII-LXXXI, figs. 7. Price, 10 cents.

NOTE.—Beginning with Volume 5, THE JOURNAL OF AGRICULTURAL RESEARCH will be issued weekly and distributed free *only* to the libraries of agricultural colleges and experiment stations, to large universities, technical schools, and such institutions as make suitable exchanges with the department. It will not be sent free to individuals. The Superintendent of Documents will receive subscriptions for this publication, the price being \$3.00 per year, 52 numbers.

**Experiment Station Record**, Vol. XXXIV, No. 2, February, 1916. E. W. Allen, Ph. D., Editor. Pp. 101-200. Price, 15 cents.

**Same**, Vol. XXXIV, No. 3, Abstract Number. Pp. 201-300. Price, 15 cents.

NOTE.—The Record is a technical review of the world's scientific literature pertaining to agriculture. It is not intended for general distribution, and its free distribution is restricted to persons connected with the agricultural colleges, experiment stations, and similar institutions, and to libraries and exchanges. It can not be sent free to individuals having no official connection with public institutions. The Superintendent of Documents will receive subscriptions for this publication, which is issued in two volumes a year, ten numbers each, at \$1 a volume.

#### SERVICE AND REGULATORY ANNOUNCEMENTS.—FOR SALE ONLY.

These contain *only* information, instructions, and notices governing the enforcement of the food and drugs act, meat inspection, 28-hour and quarantine laws, and the various regulations of the department. Issued monthly by certain bureaus. Free distribution is limited to persons in the employ of the department, to public officials whose duties render it necessary for them to have such information, to journals especially concerned, and to manufacturers and firms whose business is affected by same. Others desiring copies are respectfully referred to the Superintendent of Documents, Government Printing Office, who has them for sale *only*, at prices noted.

Bureau of Animal Industry. No. 105. January, 1916. Pp. 1-12. Feb. 28, 1916. Price, 5 cents.

Bureau of Chemistry. Supplement No. 11. N. J. 4001-4050. Pp. 1-68. Feb. 4, 1916. Price, 10 cents.

Bureau of Chemistry. Supplement No. 12. N. J. 4051-4100. Pp. 69-140. Feb. 26, 1916. Price, 10 cents.

#### SOIL SURVEYS.

All requests for soil surveys are referred to the Bureau of Soils for attention, the distribution of same being controlled by that bureau.

**Soil Survey of Columbia County, Arkansas.** By Clarence Lounsbury and E. B. Deeter. Pp. 38, fig. 1, map. (From F. O. Soils, 1914.) Price, 15 cents.

**Soil Survey of Putnam County, Florida.** By Charles N. Mooney, B. D. Gilbert, H. W. Hawker, and W. B. Cobb. Pp. 52, pl. 1, fig. 1, map. (From F. O. Soils, 1914.) Price, 15 cents.

**Soil Survey of Pottawattamie County, Iowa.** By A. L. Goodman, of the U. S. Department of Agriculture, and Peter Hanson and Harold W. Reid, of the Iowa Agricultural Experiment Station. Pp. 30, fig. 1, map. (From F. O. Soils, 1914.) Price, 15 cents.

**Soil Survey of Nemaha County, Nebraska.** By A. H. Meyer, M. W. Beck, E. H. Smies, and R. R. Burn, of the U. S. Department of Agriculture, and L. T. Skinner and W. A. Rockie, of the Nebraska Soil Survey. Pp. 38, fig. 1, map. (From F. O. Soils, 1914.) Price, 15 cents.

**Soil Survey of the Freehold Area, New Jersey.** By H. Jennings, of the Geological Survey of N. J., J. B. R. Dickey, of the U. S. Department of Agriculture, and L. L. Lee, of the N. J. Agricultural Experiment Station. Pp. 51, pl. 1, fig. 1, map. (From F. O. Soils, 1913.) Price, 15 cents.

### PUBLICATIONS OF THE WEATHER BUREAU.

Publications of the Weather Bureau are obtainable only from the Chief of the Weather Bureau or the Superintendent of Documents, Government Printing Office, at the prices noted herein.

**Monthly Weather Review.** (For sale only.) Vol. 43, No. 11, November, 1915. Jan. 25, 1916. Pp. 543-586, charts 9, figs. 13. Price, 25 cents a copy, \$2.50 a year. Payable to the Superintendent of Documents.

Special Articles: Solar and sky radiation at Washington, D. C., during Nov., 1915. By H. H. Kimball.—Increased solar activity and atmospheric optical phenomena. By J. Maurer.—Aurora of June 16-17, 1915. By Douglas F. Manning.—Aurora of June 16-17 at Ashland, Ohio. By S. W. Brandt.—Study of the upper air by means of telescopes.—Working up of wind observations. By J. W. Sandstrom.—Waterspouts off Cape San Lucas. By Willard J. Fisher.—Circulation and temperature of the atmosphere. By W. H. Dines.—Forecasting thunderstorms. By Gabriel Guillet.—Comments on above. By Durand-Greville.—A breathing well. By John Free.—Temperature inversion in the Grand River Valley, Colo. By E. S. Nichols.—Relations between meteorological conditions in the Netherlands and some circumjacent places. By J. P. van der Stok.—Internal structure of the earth and the moon. By H. Jeffreys.

**National Weather and Crop Bulletin,** No. 1, January, 1916, reporting temperature, rainfall, and crop conditions throughout the United States. (Issued weekly, on Wednesday, April to October; monthly remainder of year.) Price, 25 cents a year.

**Snow and Ice Bulletins** for February 1, 8, 15, 23, 29, 1916. These bulletins are issued weekly during the winter season, based upon data from regular Weather Bureau stations, supplemented by reports from selected cooperative observers. Price, 25 cents a year.

Jos. A. ARNOLD,  
*Editor and Chief Division Publications.*

This circular will be sent regularly to all who apply for it.

# United States Department of Agriculture,

WASHINGTON, D. C., *March 31, 1916.* **MARCH**

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[March, 1916.]



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### FARMERS' BULLETINS.—FOR FREE DISTRIBUTION.

No price is quoted for Farmers' Bulletins for the reason that the department's supply of the current numbers is ordinarily sufficient to make it possible to send them free to all applicants.

**The Care and Improvement of the Wood Lot.** By C. R. Tillotson, Forest Examiner. Pp. 24, figs. 6. Contribution from the Forest Service. Mar. 23, 1916. (**Farmers' Bulletin 711.**)  
Suitable for general distribution.

**School Lunches.** By Caroline L. Hunt, Assistant in Home Economics, States Relations Service, and Mabel Ward, Late Director of Home Science, Mississippi Industrial Institute and College. Pp. 27. Contribution from the States Relations Service. Mar. 17, 1916. (**Farmers' Bulletin 712.**)  
Is of special interest to housekeepers throughout the country, particularly those with children of school age.

**Sweet-Potato Diseases.** By L. L. Harter, Pathologist, Cotton and Truck Disease Investigations. Pp. 26, figs. 21. Contribution from the Bureau of Plant Industry. Mar. 11, 1916. (**Farmers' Bulletin 714.**)  
Is of interest to growers of sweet potatoes in the Eastern, Southern, Middle Western, and Southwestern States.

**Food for Young Children.** By Caroline L. Hunt, Scientific Assistant, Office of Home Economics. Pp. 20, figs. 4. Contribution from the States Relations Service. Mar. 4, 1916. (**Farmers' Bulletin 717.**)  
Especially adapted to the use of mothers who wish some simple and short discussion of the subject expressed in housekeepers' terms.

### DEPARTMENT BULLETINS.—TECHNICAL.

The publications listed below are technical or scientific treatises or bulletins applying to a special industry or locality. The edition is limited, but they will be furnished free to persons who can use such specialized information as long as the supply lasts. However, to insure prompt receipt, remit price to the Superintendent of Documents.

**Notes on Five North American Buffalo Gnats of the Genus Simulium.** By Arthur W. Jobbins-Pomeroy, Entomological Assistant. Pp. 48, pl. 5, figs. 15. Contribution from the Bureau of Entomology. (Professional Paper.) Mar. 6, 1916. (**Department Bulletin 329.**) Price, 10 cents.  
This paper of interest to persons living east of the Mississippi River.

**Methods for the Determination of the Physical Properties of Road-Building Rock.** By Frank H. Jackson, Jr., Assistant Testing Engineer. Pp. 28, figs. 12. Contribution from the Office of Public Roads and Rural Engineering. (Professional Paper.) Mar. 17, 1916. (**Department Bulletin 347.**) Price, 10 cents.

Is a partial revision of Office of Public Roads Bulletin No. 44, and of interest to road engineers and builders.

**The Utilization of Cherry By-Products.** By Frank Rabak, Chemical Biologist, Drug-Plant and Poisonous-Plant Investigations. Pp. 24. Contribution from the Bureau of Plant Industry. (Professional Paper.) Mar. 10, 1916. (**Department Bulletin 350.**) Price, 5 cents.

Suggests a method of utilizing the cherry pits and juices accumulated at canneries. Of interest to those engaged in the fruit-packing industry.

**Moisture Content and Shrinkage of Forage, and the Relation of These Factors to the Accuracy of Experimental Data.** By H. N. Vinall, Agronomist, and Roland McKee, Assistant Agrostologist, Office of Forage-Crop Investigations. Pp. 37. Contribution from the Bureau of Plant Industry. (Professional Paper.) Mar. 16, 1916. (**Department Bulletin 353.**) Price, 10 cents.

Of interest to dealers in hay and other forage crops.

**Milk and Cream Contests.** By Ernest Kelly, in Charge of Market Milk Investigations, and L. B. Cook and J. A. Gamble, Market Milk Specialists, Dairy Division. Pp. 24. Contribution from the Bureau of Animal Industry. (Professional Paper.) Mar. 7, 1916. (**Department Bulletin 356.**) Price, 5 cents.

Is of interest to dairymen generally, and especially to those who are engaged in improving the output of their establishments.

**Comparative Spinning Tests of the Different Grades of Arizona-Egyptian with Sea Island and Sakellaridis Egyptian Cottons.** By Fred Taylor, Cotton Technologist, and William S. Dean, Assistant in Cotton Testing. Pp. 21, figs. 2. Contribution from the Office of Markets and Rural Organization. (Professional Paper.) Mar. 30, 1916. (**Department Bulletin 359.**) Price, 5 cents.

Is of interest to the growers, cotton merchants, manufacturers, and dealers in Arizona-Egyptian, Sea Island, and Sakellaridis Egyptian cottons and cotton yarns.

**Brown-Rot of Prunes and Cherries in the Pacific Northwest.** By Charles Brooks and D. F. Fisher, Office of Fruit-Disease Investigations. Pp. 10, pls. 3. Contribution from the Bureau of Plant Industry. (Professional Paper.) Mar. 6, 1916. (**Department Bulletin 368.**) Price, 5 cents.

Is intended particularly for the benefit of prune and cherry growers of western Washington and Oregon, but is of interest to growers of these fruits in other sections of the United States. It is also of scientific interest to plant pathologists in general.

#### DEPARTMENT BULLETINS.

Bulletins listed hereunder can not be furnished through this Office, as the Department's supply is exhausted. Remit price for same to the Superintendent of Documents, Government Printing Office. Do not send money to this Department.

**Extension Course in Vegetable Foods for Self-Instructed Classes in Movable Schools of Agriculture.** By Anna Barrows, Director, School of Domestic Science, Chautauqua, N. Y., and Instructor, School of Household Arts, Columbia University. Pp. 78, figs. 4. Contribution from the States Relations Service. (Professional Paper.) Mar. 22, 1916. (**Department Bulletin 123.**) Price, 10 cents.

Is intended for the use of small groups of farm women assembled as a class to study the subject in a systematic manner with one of their number as a leader. It is adapted for such use in any part of the United States.

**Birds of Porto Rico.** By Alex Wetmore, Assistant Biologist. Pp. 140, pls. 10. Contribution from the Bureau of Biological Survey. (Professional Paper.) Mar. 24, 1916. (**Department Bulletin 326.**) Price, 30 cents.

A report on the relations of the island birds to the insect fauna of Porto Rico.

**The Raisin Industry.** By George C. Husmann, Pomologist in Charge of Viticultural Investigations, Office of Horticultural and Pomological Investigations. Pp. 15, pls. 9, figs. 3. Contribution from the Bureau of Plant Industry. Mar. 17, 1916. (**Department Bulletin 349.**) Price, 10 cents.

This bulletin has been prepared for the purpose of answering questions relative to the raisin industry of the United States. The pruning, training, cultural methods, and varieties suitable for raisin purposes, as well as the methods of harvesting and drying the grapes and the curing and processing of the raisins, are described.

## MISCELLANEOUS.

**List of Workers in Subjects Pertaining to Agriculture and Home Economics in the U. S. Department of Agriculture and in the State Agricultural Colleges and Experiment Stations.** (Corrected to December, 1915). Pp. 129. Prepared in the Division of Publications. Mar. 30, 1916.

**The Influence of Relative Area in Intertilled and Other Classes of Crops and Crop Yield.** By D. A. Brodie, Agriculturist. Pp. 8, fig. 1. Contribution from the Office of Farm Management, Office of the Secretary. Mar. 31, 1916. (*Circular 57*, Office of the Secretary.) Price, 5 cents.

## SERIALS.

**Journal of Agricultural Research.** (Issued weekly. For sale only.)

Vol. 5, No. 23. Mar. 6, 1916. Contents: Flow through Weir Notches with Thin Edges and Full Contractions. By V. M. Cone.—Identity of *Eriosoma pyri*. By A. C. Baker. Pp. 1051–1119, figs. 26. Price, 15 cents.

*Same*, No. 24. Mar. 13, 1916. Contents: A New Penetration Needle for Use in Testing Bituminous Materials. By Charles S. Reeve and Fred P. Pritchard.—A New Irrigation Weir. By V. M. Cone. Pp. 1121–1143, pl. 1, figs. 16. Price, 10 cents.

*Same*, No. 25. Mar. 20, 1916. Contents: Inheritance of Fertility in Swine. By Edward N. Wentworth and C. E. Aubel.—Relation of Green Manures to the Failure of Certain Seedlings. By E. B. Fred.—A New Spray Nozzle. By C. W. Woodworth.—A New Interpretation of the Relationships of Temperature and Humidity to Insect Development. By W. Dwight Pierce. Pp. 1145–1191, pls. LXXXIII–LXXXVI, figs. 7. Price, 15 cents.

NOTE.—Beginning with Volume 5, The Journal of Agricultural Research will be issued weekly and distributed free *only* to the libraries of agricultural colleges and experiment stations, to large universities, technical schools, and such institutions as make suitable exchanges with the department. *It will not be sent free to individuals.* The Superintendent of Documents will receive subscriptions for this publication, the price being \$3 per year, 52 numbers.

**Experiment Station Record.** Vol. XXXIV, No. 4, March, 1916. E. W. Allen, Ph. D., Editor. Pp. 301–400. Price, 15 cents.

NOTE.—The Record is a technical review of the world's scientific literature pertaining to agriculture. It is not intended for general distribution, and its free distribution is restricted to persons connected with the agricultural colleges, experiment stations, and similar institutions, and to libraries and exchanges. It can not be sent free to individuals having no official connection with public institutions. The Superintendent of Documents will receive subscriptions for this publication, which is issued in two volumes a year, ten numbers each, at \$1 a volume.

**The Monthly Crop Report.** Vol. 2, No. 2, February, 1916. Pp. 13–20. (Bureau of Crop Estimates.)

*Same*. Vol. 2, No. 3, March 16, 1916. Pp. 21–28. (Bureau of Crop Estimates.) Contains data relating to agriculture, including estimates of acreage, conditions, yield, prices, and value of crops and live stock. For free distribution.

## SERVICE AND REGULATORY ANNOUNCEMENTS.—FOR SALE ONLY.

These contain *only* information, instructions, and notices governing the enforcement of food and drugs act, meat inspection, 28-hour and quarantine laws, and the various regulations of the department. Issued monthly by certain bureaus. *Free distribution* is limited to persons in the employ of the department, to public officials whose duties render it necessary for them to have such information, to journals especially concerned, and to manufacturers and firms whose business is affected by same. Others desiring copies are respectfully referred to the Superintendent of Documents, Government Printing Office, who has them for sale *only*, at prices noted.

Bureau of Animal Industry. No. 106. February, 1916. Pp. 13–20. Mar. 22, 1916. Price, 5 cents.

Federal Horticultural Board. No. 24. January, 1916. Pp. 13. Mar. 1, 1916. Price, 5 cents.

Federal Horticultural Board. No. 25. February, 1916. Pp. 15–30. Mar. 24, 1916. Price, 5 cents.

Office of Markets and Rural Organization. No. 7. Pp. 33–50, figs. 2. Mar. 17, 1916. Price, 5 cents.

A brief history of the movement to secure universal cotton standards.

## SOIL SURVEYS.

All requests for soil surveys are referred to the Bureau of Soils for attention, the distribution of same being controlled by that bureau.

**Soil Survey of Lee County, Iowa.** By L. V. Davis, of the U. S. Department of Agriculture, and Martin E. Sar, of the Iowa Agricultural Experiment Station. Pp. 36, pl. 2, fig. 1, map. (From F. O. Soils, 1914.) Price, 15 cents.

**Soil Survey of Webster Parish, Louisiana.** By A. H. Meyer, E. S. Vanatta, B. W. Tillman, and R. F. Rogers. Pp. 40, fig. 1, map. (From F. O. Soils, 1914.) Price, 15 cents.

**Soil Survey of Montgomery County, Maryland.** By William T. Carter, Jr., of the U. S. Department of Agriculture, and J. P. D. Hull, of the Maryland Geological Survey. Pp. 39, pls. 5, fig. 1, map. (From F. O. Soils, 1914.) Price, 15 cents.

**Soil Survey of Clinton County, New York.**—By E. T. Maxon, of the U. S. Department of Agriculture, and W. R. Cone, of the New York State College of Agriculture. Pp. 37, fig. 1, map. (From F. O. Soils, 1914.) Price, 15 cents.

**Soil Survey of Union County, North Carolina.** By B. B. Derrick, of the U. S. Department of Agriculture, and S. O. Perkins, of the North Carolina Department of Agriculture. Pp. 38, fig. 1, map. (From F. O. Soils, 1914.) Price, 15 cents.

**Soil Survey of Portage County, Ohio.** By Charles N. Mooney and H. G. Lewis, of the U. S. Department of Agriculture, and A. F. Head and Carl W. Shiffler, of the Ohio Agricultural Experiment Station. Pp. 44, fig. 1, map. (From F. O. Soils, 1914.) Price, 15 cents.

**Soil Survey of Trumbull County, Ohio.** By George N. Coffey and John Woodward, of the Ohio Agricultural Experiment Station, and J. M. Snyder, of the U. S. Department of Agriculture. Pp. 53, figs. 2, map. (From F. O. Soils, 1914.) Price, 15 cents.

**Soil Survey of Raleigh County, West Virginia.** By W. J. Latimer. Pp. 34, fig. 1, map. (From F. O. Soils, 1914.) Price, 15 cents.

## PUBLICATIONS OF THE WEATHER BUREAU.

Publications of the Weather Bureau are obtainable only from the Chief of the Weather Bureau or the Superintendent of Documents, Government Printing Office, at the prices noted herein.

**Monthly Weather Review.** (For sale only.) Vol. 43, No. 12. December, 1915. [Mar. 1, 1916.] Pp. 589–650, charts 9, figs. 7. Price, 25 cents a copy, \$2.50 a year. Payable to the Superintendent of Documents.

Special Articles: Solar and sky radiation at Washington, D. C., during December, 1915. By H. H. Kimball.—Solar radiation intensities at Santa Fe, N. Mex., during September, November, and December, 1915. By H. H. Kimball.—A halo in the making. By J. R. Weeks.—Lunar halo of June 24–25, 1915, at Richmond, Va. By T. R. Brooks and others.—Penetrating radiation present in the atmosphere. By A. Gockel.—Concomitant changes in terrestrial magnetism and solar radiation. By L. A. Bauer.—Radioactive deposit from the atmosphere on an uncharged wire. By S. J. M. Allen.—Penetrating radiation at high altitudes. By W. Kolhorster.—Aurorae, earth currents, and magnetic disturbances. By Otto Klotz.—The melting of snow. By Robert E. Horton (6 figs.).—Meteorology and seismology at the Pan-American Scientific Congress. By C. F. Tallman.—Meaning of the word "fair" in meteorology. By Eleanor Buynitzky.—Aurelia-alto-cumulus cloud. By George Reeder.—Tornadoes in Kansas. By S. D. Flora.—Reforestation and occult condensation. By Paul Descombes.—Percentage frequency of thunderstorms in the United States.—Storms and hurricanes in Jamaica, 1655–1915. By Maxwell Hall.—Application of physical principles to problems suggested by oceanic circulation and temperatures. By Geo. F. McEwen.—Albert Adams Young, 1836–1916. By J. H. Armington.

**National Weather and Crop Bulletin,** No. 2, February, 1916, reporting temperature, rainfall, and crop conditions throughout the United States. (Issued weekly, on Wednesday, April to October; monthly remainder of year.) Price, 25 cents a year.

**Snow and Ice Bulletins** for March 7, 14, 21, 28, 1916. These bulletins are issued weekly during the winter season, based upon data from regular Weather Bureau stations, supplemented by reports from selected cooperative observers. Price, 25 cents a year.

Jos. A. ARNOLD,  
*Editor and Chief Division Publications.*

This circular will be sent regularly to all who apply for it.

## United States Department of Agriculture,

WASHINGTON, D. C., April 29, 1916.

### MONTHLY LIST OF PUBLICATIONS.

[April, 1916.]

#### HOW TO SECURE PUBLICATIONS.

A copy of any of the publications listed herein, including those with price named, except the Journal of Agricultural Research, Experiment Station Record, and publications of the Weather Bureau, may be obtained free upon application to the Editor and Chief of the Division of Publications, United States Department of Agriculture, Washington, D. C., as long as the department's supply lasts.

After this department's supply of the publications listed below is exhausted, those publications of which the price is indicated can still be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C., but by purchase only, and at prices noted herein.

Send all remittances to the Superintendent of Documents direct. His office is not a part of the Department of Agriculture.

#### FARMERS' BULLETINS.—FOR FREE DISTRIBUTION.

No price is quoted for Farmers' Bulletins for the reason that the department's supply of the current numbers is ordinarily sufficient to make it possible to send them free to all applicants.

**Muscadine Grapes.** By George C. Husmann, Pomologist in Charge, and Charles Dearing, Scientific Assistant, Viticultural Investigations, Office of Horticultural and Pomological Investigations. Pp. 28, figs. 29. Contribution from the Bureau of Plant Industry. Apr. 1, 1916. (*Farmers' Bulletin* 709.)

For distribution in South Atlantic and Gulf Coast States.

**Sheep Scab.** By Marion Imes, Veterinary Inspector, Zoological Division. Pp. 36, figs. 21. Contribution from the Bureau of Animal Industry. Apr. 17, 1916. (*Farmers' Bulletin* 713.)

Is intended for the information of sheep raisers and live-stock sanitary officers concerned in the prevention, cure, or eradication of sheep scab. It supersedes Farmers' Bulletin 159.

**Cooperative Live Stock Shipping Associations.** By S. W. Doty, Assistant in Marketing Live Stock and Meats, and L. D. Hall, Specialist in Marketing Live Stock and Meats. Pp. 16, figs. 3. Contribution from the Office of Markets and Rural Organization. Apr. 10, 1916. (*Farmers' Bulletin* 718.)

Is intended to give to farmers and stockmen who have small numbers of live stock to sell information as to how to organize for the purpose of making car-lot shipments to central markets. It should be of special interest to communities which do not have satisfactory local markets for live stock and where cooperative shipping associations are feasible.

**The Rose-Chafer. A Destructive Garden and Vineyard Pest.** By F. H. Chittenden, In Charge of Truck-Crop and Stored-Product Insect Investigations, and A. L. Quaintance, In Charge of Deciduous Fruit Insect Investigations. Pp. 8, fig. 4. Contribution from the Bureau of Entomology. Apr. 28, 1916. (*Farmers' Bulletin* 721.)

Describes life history and habits of, and methods of control of this insect.

**The Leaf Blister Mite of Pear and Apple.** By A. L. Quaintance, In Charge of Deciduous Fruit Insect Investigations. Pp. 6, figs. 4. Contribution from the Bureau of Entomology. Apr. 21, 1916. (*Farmers' Bulletin* 722.)

For general distribution.

**The Oyster-Shell Scale and the Scurfy Scale.** By A. L. Quaintance, In Charge of Deciduous Fruit Insect Investigations, and E. R. Sasser, Collaborator. Pp. 16, figs. 3. Contribution from the Bureau of Entomology. Apr. 26, 1916. (Farmers' Bulletin 723.)

Of interest to fruit growers generally.

**Wireworms Destructive to Cereal and Forage Crops.** By J. A. Hyslop, Entomological Assistant, Cereal and Forage Insect Investigations. Pp. 12, figs. 6. Contribution from the Bureau of Entomology. Apr. 29, 1916. (Farmers' Bulletin 725.)

Suitable for general distribution.

#### DEPARTMENTAL BULLETINS.—TECHNICAL.

The publications listed below are technical or scientific treatises or bulletins applying to a special industry or locality. The edition is limited, but they will be furnished free to persons who can use such specialized information as long as the supply lasts. However, to insure prompt receipt, remit price to the Superintendent of Documents.

**A Study of the Preparation of Frozen and Dried Eggs in the Producing Section.** By M. E. Pennington, Chief, Food Research Laboratory, M. K. Jenkins, Assistant Bacteriological Expert, Assisted by S. H. Ross, E. Q. St. John, Norman Hendrickson, and W. B. Hicks, of the Food Research Laboratory and the Omaha Food and Drug Inspection Laboratory. Pp. 99, pls. 17, figs. 7. Contribution from the Bureau of Chemistry. (Professional Paper.) Apr. 28, 1916. (Department Bulletin 224.) Price, 30 cents.

Gives a general statement of the work done and the findings which should be of interest to the general egg industry, but more particularly to manufacturers of frozen and dried products, and bakers who use these products.

**Forest Pathology in Forest Regulation.** By E. P. Meinecke, Forest Pathologist, Office of Investigations in Forest Pathology. Pp. 63. Contribution from the Bureau of Plant Industry. (Professional Paper.) Apr. 7, 1916. (Department Bulletin 275.) Price, 10 cents.

This bulletin discusses the bearing of modern forest pathology on forest regulation.

**Development of Sugar and Acid in Grapes During Ripening.** By William B. Alwood, Enological Chemist, with the Collaboration of B. J. Hartmann, J. R. Eoff, M. J. Ingle, and S. F. Sherwood. Pp. 28. Contribution from the Bureau of Chemistry. Apr. 11, 1916. (Department Bulletin 335.) Price, 5 cents.

Of interest to growers of grapes for commercial purposes.

**Experiments on the Economical Use of Irrigation Water in Idaho.** By Don H. Bark, Irrigation Engineer, Division of Irrigation Investigations. Pp. 58, pls. 3, figs. 13. Contribution from the Office of Public Roads and Rural Engineering. (Professional Paper.) Apr. 21, 1916. (Department Bulletin 339.) Price, 10 cents.

This bulletin will be of interest to officials administering the water supply of the Western States, to students of irrigation practice, and to farmers.

**Ground-Wood Pulp.** Part I, The Grinding of Cooked and Uncooked Spruce. Part II, Substitutes for Spruce in the Manufacture of Ground-Wood Pulp. By J. H. Thickens, Chemical Engineer in Forest Products, and G. C. McNaughton, Engineer in Forest Products. Pp. 151, pls. 12, figs. 44, and samples of paper made from different woods. Contribution from the Forest Service. (Professional Paper.) Apr. 26, 1916. (Department Bulletin 343.)

None for free distribution and none for sale.

**Relation of Mineral Composition and Rock Structure to the Physical Properties of Road Materials.** By E. C. Lord, Petrographer. Pp. 26, pls. 8, figs. 3. Contribution from the Office of Public Roads and Rural Engineering. (Professional Paper.) Apr. 4, 1916. (Department Bulletin 348.) Price, 10 cents.

Of especial interest to road contractors and engineers.

**The Terrapin Scale: An Important Insect Enemy of Peach Orchards.** By F. L. Simanton, Entomological Assistant, Deciduous Fruit Insect Investigations. Pp. 96, pls. 3, figs. 19. Contribution from the Bureau of Entomology. (Professional Paper.) Apr. 22, 1916. (Department Bulletin 351.) Price, 15 cents.

Describes life history, habits, enemies of, and methods of control for this insect, with report of investigations had at Mont Alto, Pa., in 1912 and 1913.

**Extension Course in Soils for Self-Instructed Classes in Movable Schools of Agriculture.** By A. R. Whitsen, Professor of Soils, University of Wisconsin, and H. B. Hendrick, Assistant in Agricultural Education, States Relations Service. Pp. 92. Contribution from the States Relations Service. (Professional Paper.) Apr. 13, 1916. (Department Bulletin 355.) Price, 10 cents.

Is intended for the use of small groups of farmers assembled as a class to study the subject in a systematic manner with one of their number as a leader.

**Alaska and Stoner, or "Miracle," Wheats: Two Varieties Much Misrepresented.** By Carleton R. Ball, Agronomist in Charge of Western Wheat Investigations, and Clyde E. Leighty, Agronomist in Charge of Eastern Wheat Investigations. Pp. 28, figs. 6. Contribution from the Bureau of Plant Industry. Apr. 27, 1916. (Department Bulletin 357.) Price, 5 cents.

For general distribution.

**Studies of the Mexican Cotton Boll Weevil in the Mississippi Valley.** By R. W. Howe, Entomological Assistant, Southern Field Crop Insect Investigations. Pp. 32, figs. 2. Contribution from the Bureau of Entomology. (Professional Paper.) Apr. 12, 1916. (Department Bulletin 358.) Price, 5 cents.

This bulletin is of interest to entomologists in the cotton belt.

**Forest Conservation for States in the Southern Pine Region.** By J. Girvin Peters, Chief of State Cooperation. Pp. 14. Contribution from the Forest Service. Apr. 15, 1916. (Department Bulletin 364.) Price, 5 cents.

The bulletin points out the essential elements in the various forest problems that confront the States in the southern pine region, shows how these problems are interrelated, and forms a basis on which may be founded a plan for solving them, matters of great importance to lumbermen, farmers, and all others interested directly or indirectly in the conservation of the timber resources of that region.

**Manufacturing Tests of Cotton Fumigated with Hydrocyanic-Acid Gas.** By William S. Dean, Assistant in Cotton Testing. Pp. 12. Contribution from the Office of Markets and Rural Organization. (Professional Paper.) Apr. 24, 1916. (Department Bulletin 366.) Price, 5 cents.

Should be of interest to manufacturers and dealers in foreign-grown cotton and cotton yarns, also indirectly of interest to the domestic producers, manufacturers, and dealers in all staple cottons.

#### REPORTS.

**Yearbook of the U. S. Department of Agriculture, 1915.** Pp. 632, pls. 75, figs. 13, 69 pp. graphs. Price, 75 cents.

This Yearbook contains the annual report of the Secretary, 72 pages; 24 miscellaneous articles, 331 pages; an appendix, 180 pages; an index, 32 pages. Only 6 out of each 100 copies are allotted to this department, which number is insufficient to supply even its regular correspondents. Other applicants are therefore respectfully referred to their Representative or Delegate in Congress, as the other 94 per cent is allotted to that body. The Superintendent of Documents, Government Printing Office, Washington, D. C., has it for sale at 75 cents per copy.

#### SERIALS.

**Journal of Agricultural Research.** (Issued weekly. For sale only.)

Vol. 6, No. 1. April 3, 1916. Contents: Relation of Carbon Bisulphid to Soil Organisms and Plant Growth. By E. B. Fred.—Climatic Conditions as Related to Cerco-spora beticola. By Venus W. Pool and M. F. McKay. Pp. 1-60, pls. I-IV, figs. 10. Price, 20 cents.

Same, No. 2. April 10, 1916. Contents: Soluble Nonprotein Nitrogen of Soil. By R. S. Potter and R. S. Snyder.—Oviposition of Megastigmus spermotrophus in the Seed of Douglas Fir. By J. M. Miller.—Citrus Canker. By Frederick A. Wolfe. Pp. 61-100, pls. V-XI, figs. 8. Price, 15 cents.

Same, No. 3. April 17, 1916. Contents: Determination of Stearic Acid in Butter Fat. By E. B. Holland, J. C. Reed, and J. P. Buckley, Jr.—Life History and Habits of Two Nematodes Parasitic on Insects. By J. H. Merrill and A. L. Ford.—Insect Injury to Cotton Seedlings. By B. R. Coad and R. W. Howe. Pp. 101-139, pls. XII-XVI, figs. 5. Price, 15 cents.

Same, No. 4. April 24, 1916. Contents: A Sex-Limited Color in Ayrshire Cattle. By Edward N. Wentworth.—Watermelon Stem-End Rot. By F. C. Meier.—Effect of Pasteurization on Mold Spores. By Charles Thom and S. Henry Ayers.—Effect of Water in the Ration on the Composition of Milk. By W. F. Turner, R. H. Shaw, R. P. Norton, and P. A. Wright.—Crown gall Studies, Showing Changes in Plant Structures Due to a Changed Stimulus. By Erwin F. Smith. Pp. 141-182, pls. XVII-XXIII, figs. 4. Price, 15 cents.

NOTE.—Beginning with Volume 5, The Journal of Agricultural Research will be issued weekly and distributed free only to the libraries of agricultural colleges and experiment stations, to large universities, technical schools, and such institutions as make suitable exchanges with the department. It will not be sent free to individuals. The Superintendent of Documents will receive subscriptions for this publication, the price being \$3 per year, 52 numbers.

**Experiment Station Record.** Vol. XXXIV, No. 5, April, 1916. E. W. Allen, Ph. D., Editor. Pp. 401-500. Price, 15 cents.

Same. Vol. XXXIV, No. 6, Abstract number, Apr. 22, 1916. Pp. 501-600. Price, 15 cents.

NOTE.—The Record is a technical review of the world's scientific literature pertaining to agriculture. It is not intended for general distribution, and its free distribution is restricted to persons connected with the agricultural colleges, experiment stations, and similar institutions, and to libraries and exchanges. It can not be sent free to individuals having no official connection with public institutions. The Superintendent of Documents will receive subscriptions for this publication, which is issued in two volumes a year, ten numbers each, at \$1 a volume.

**The Monthly Crop Report.** Vol. 2, No. 4, April 15, 1916. Pp. 29-40. (Bureau of Crop Estimates.)

Contains data relating to agriculture, including estimates of acreage, conditions, yield, prices, and value of crops and live stock. For free distribution.

#### SERVICE AND REGULATORY ANNOUNCEMENTS.—FOR SALE ONLY.

These contain *only* information, instructions, and notices governing the enforcement of food and drugs act, meat inspection, 28-hour and quarantine laws, and the various regulations of the department. Issued monthly by certain bureaus. Free distribution is limited to persons in the employ of the department, to public officials whose duties render it necessary for them to have such information, to journals especially concerned, and to manufacturers and firms whose business is affected by same. Others desiring copies are respectfully referred to the Superintendent of Documents, Government Printing Office, who has them for sale *only*, at prices noted.

- Bureau of Animal Industry. No. 107. March, 1916. Pp. 21-31. Apr. 28, 1916. Price, 5 cents.
- Bureau of Biological Survey. Pp. 1. [Revokes S. R. A. No. 7, dated July 19, 1915.] Apr. 25, 1916. Price, 5 cents.
- Bureau of Chemistry. Supplement No. 13. [N. J. 4101-4150.] Pp. 141-246. Apr. 19, 1916. Price, 10 cents.
- Bureau of Chemistry. Supplement No. 14. [N. J. 4151-4200.] Pp. 247-315. Apr. 29, 1916. Price, 10 cents.
- Federal Horticultural Board. No. 26. March, 1916. Pp. 31-43. Apr. 29, 1916. Price, 5 cents.
- Office of Markets and Rural Organization. No. 8. Pp. 51-95. Apr. 15, 1916. Price, 5 cents.
- Office of Markets and Rural Organization. No. 9. Pp. 97-117. Apr. 29, 1916. Price, 5 cents.

#### SOIL SURVEYS.

All requests for soil surveys are referred to the Bureau of Soils for attention, the distribution of same being controlled by that bureau.

**Soil Survey of Mississippi County, Arkansas.** By E. C. Hall, T. M. Bushnell, L. V. Davis, William T. Carter, Jr., and A. L. Patrick. Pp. 42, pl. 1, fig. 1, map. (From F. O. Soils, 1914.) Price, 15 cents.

**Soil Survey of the Merced Area, California.** By E. B. Watson and Party. Pp. 70, pls. 4, fig. 1, map. (From F. O. Soils, 1914.) Price 25 cents.

**Soil Survey of Warren County, Indiana.** By E. J. Grimes, of the Indiana Department of Geology, and E. H. Stevens, of the U. S. Department of Agriculture. Pp. 39, fig. 1, map. (From F. O. Soils, 1914.) Price, 15 cents.

**Soil Survey of Muscatine County, Iowa.** By H. W. Hawker, of the U. S. Department of Agriculture, and H. W. Johnson, of the Iowa Agricultural Experiment Station. Pp. 64, fig. 1, map. (From F. O. Soils, 1914.) Price, 15 cents.

**Soil Survey of Seward County, Nebraska.** By A. H. Meyer and E. H. Smies, of the U. S. Department of Agriculture, and L. T. Skinner and W. A. Rockie, of the Nebraska Soil Survey. Pp. 40, fig. 1, map. (From F. O. Soils, 1914.) Price, 15 cents.

**Soil Survey of Thurston County, Nebraska.** By A. H. Meyer and M. W. Beck, of the U. S. Department of Agriculture, and W. A. Rockie, of the Nebraska Soil Survey. Pp. 44, fig. 1, map. (From F. O. Soils, 1914.) Price, 15 cents.

**Soil Survey of Florence County, South Carolina.** By J. H. Agee, J. A. Kerr, and W. E. McLendon. Pp. 36, fig. 1, map. (From F. O. Soils, 1914.) Price, 15 cents.

**Soil Survey of McDowell and Wyoming Counties, West Virginia.** By W. J. Latimer. Pp. 32, fig. 1, map. (From F. O. Soils, 1914.) Price, 15 cents.

#### PUBLICATIONS OF THE WEATHER BUREAU.

Publications of the Weather Bureau are obtainable only from the Chief of the Weather Bureau or the Superintendent of Documents, Government Printing Office, at the prices noted herein.

**Monthly Weather Review.** (For sale only.) Vol. 44, No. 1. January, 1916. [Mar. 28, 1916.] Pp. 1-59, charts 9, figs. 6. Price, 25 cents a copy, \$2.50 a year. Payable to the Superintendent of Documents.

Special Articles: Solar and sky radiation measurements during January, 1916. By H. H. Kimball.—Solar radiation measurements at Lincoln, Nebr., 1911-1915. By H. H. Kimball.—Solar radiation measurements at Madison, Wis., 1913-1915. By H. H. Kimball.—Duration of twilight. By H. H. Kimball.—Lunar halo of July 24, 1861. By W. B. Frew.—Wind velocity and elevation. By W. J. Humphreys.—Some researches in the Far Eastern seasonal correlations. By T. Okada.—Annual hours of fog, 1885-1915. By Lighthouse Service.—The physician and the Weather Bureau. By F. A. Carpenter.—Alto-cumulus with virgulus. By C. F. Talman.—Title-page and Index for Volume 43, 1915.

**National Weather and Crop Bulletin,** Nos. 3, March; 4, 5, and 6, April, 1916, reporting temperature, rainfall, and crop conditions throughout the United States. (Issued weekly, on Wednesday, April to October; monthly remainder of year.) Price, 25 cents a year.

Jos. A. ARNOLD,  
*Editor and Chief Division Publications.*

This circular will be sent regularly to all who apply for it.

# United States Department of Agriculture,

WASHINGTON, D. C., May 31, 1916.

## MONTHLY LIST OF PUBLICATIONS.

[May, 1916.]

### HOW TO SECURE PUBLICATIONS.

A copy of any of the publications listed herein, including those with price named, except the Journal of Agricultural Research, Experiment Station Record, and publications of the Weather Bureau, may be obtained free upon application to the Editor and Chief of the Division of Publications, United States Department of Agriculture, Washington, D. C., as long as the department's supply lasts.

After this department's supply of the publications listed below is exhausted, those publications of which the price is indicated can still be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C., but by purchase only, and at the prices noted herein.

Send all remittances to the Superintendent of Documents direct. His office is not a part of the Department of Agriculture.

### FARMERS' BULLETINS—FOR FREE DISTRIBUTION.

No price is quoted for Farmers' Bulletins for the reason that the department's supply of the current numbers is ordinarily sufficient to make it possible to send them free to all applicants.

**An Economic Study of the Farm Tractor in the Corn Belt.** By Arnold P. Yerkes, Assistant Agriculturist, and L. M. Church, Assistant in Farm Accounting. Pp. 24. Contribution from the Office of Farm Management, Office of the Secretary. May 5, 1916. (**Farmers' Bulletin 719.**)  
For general distribution.

**The True Army Worm and Its Control.** By W. R. Walton, Entomological Assistant, Cereal and Forage Insect Investigations. Pp. 12, figs. 8. Contribution from the Bureau of Entomology. May 23, 1916. (**Farmers' Bulletin 731.**)  
Is of general interest to crop growers everywhere, and especially east of the Rocky Mountains.

**Marquis Wheat.** By Carleton R. Ball, Agronomist in Charge of Western Wheat Investigations, and J. Allen Clark, Scientific Assistant in Western Wheat Investigations. Pp. 8, figs. 2. Contribution from the Bureau of Plant Industry. May 29, 1916. (**Farmers' Bulletin 732.**)  
Suitable for general distribution.

### DEPARTMENTAL BULLETINS—TECHNICAL.

The publications listed below are technical or scientific treatises or bulletins applying to a special industry or locality. The edition is limited, but they will be furnished free to persons who can use such specialized information as long as the supply lasts. However, to insure prompt receipt, remit price to the Superintendent of Documents.

**The Cherry Leaf-Beetle, A Periodically Important Enemy of Cherries.** By R. A. Cushman, Entomological Assistant, and Dwight Isely, Scientific Assistant, Deciduous Fruit Insect Investigations. Pp. 28, pls. 5, figs. 9. Contribution from the Bureau of Entomology. (Professional Paper.) May 5, 1916. (**Department Bulletin 352.**) Price, 10 cents.  
Gives life history, habits, distribution, and methods of control of this insect.

**A System of Accounts for Primary Grain Elevators.** By John R. Humphrey, Assistant in Market Business Practice, and W. H. Kerr, Investigator in Market Business Practice. Pp. 30. Contribution from the Office of Markets and Rural Organization. May 6, 1916. (**Department Bulletin 362.**) Price, 10 cents.  
Is intended for all primary grain elevators throughout the United States. It contains copies of forms and a description of their uses for a system of accounts which is being recommended by the Office of Markets and Rural Organization, U. S. Department of Agriculture, as a uniform system for primary grain elevators.

**The Pink Corn-Worm: An Insect Destructive to Corn in the Crib.** By F. H. Chittenden, In Charge of Truck Crop and Stored Product Insect Investigations. Pp. 20, pls. 4, figs. 7. Contribution from the Bureau of Entomology. (Professional Paper.) May 8, 1916. (**Department Bulletin 363.**) Price, 10 cents.

Points out the increasing menace of this insect, which has never been considered a serious enemy of grain, but now assumes nearly the same importance as the Anthonomus grain moth and is much more troublesome than the European grain moth. It also recommends methods of control. It will prove of interest to farmers in the region extending from South Carolina westward to central Texas, southward to southern Texas, and northward to Arkansas and Tennessee.

**Bacteria in Commercial Bottled Waters.** By Maud Mason Obst, Bacteriological Chemist. Pp. 14. Contribution from the Bureau of Chemistry. (Professional Paper.) May 26, 1916. (Department Bulletin 369.) Price, 5 cents.

A report of results obtained from a bacteriological examination of bottled waters from 110 American and 57 foreign springs.

**Patronage Dividends in Cooperative Grain Companies.** By John R. Humphrey, Assistant in Market Business Practice, and W. H. Kerr, Investigator in Market Business Practice. Pp. 11. Contribution from the Office of Markets and Rural Organization. May 23, 1916. (Department Bulletin 371.) Price, 5 cents.

Should be of interest to farmers' cooperative grain elevators and warehouses, and to members of these companies and to farmers and others who are forming new cooperative grain elevators and warehouses.

**Commercial Production of Thymol from Horsemint (*Monarda Punctata*).** By S. C. Hood, Scientific Assistant, Drug-Plant and Poisonous-Plant Investigations. Pp. 12. Contribution from the Bureau of Plant Industry. May 16, 1916. (Department Bulletin 372.) Price, 5 cents.

Gives method of cultivation and harvesting the mint, and the extraction and distillation of the oil.

#### MISCELLANEOUS.

**Legal Standards for Dairy Products.** (Revised to July 1, 1915.) Pp. 3. May 1, 1916. (Bureau of Animal Industry.) Price, 5 cents.

**Information for Prospective Settlers in Alaska.** By C. C. Georgeson, Agronomist in Charge. Pp. 30, pls. 4, map. May 11, 1916. (Circular No. 1, Alaska Agricultural Experiment Station.) Price, 15 cents.

**Reports of Drs. Veranus A. Moore, Mazyck P. Ravenel, and William T. Sedgwick upon the Federal Meat Inspection.** Pp. 10. May 27, 1916. (Circular No. 58.) Price, 5 cents.

#### SERIALS.

**Journal of Agricultural Research.** (Issued weekly. For sale only.)

Vol. 5, No. 26. March 27, 1916. Title Page, Contents, and Index to Volume V. Pp. xxvii + 1193-1207. Price, 10 cents.

Vol. 6, No. 5. May 1, 1916. Contents: Effect of Certain Species of Fusarium on the Composition of the Potato Tuber. By Lon A. Hawkins.—Hyperaspis binotata, a Predatory Enemy of the Terrapin Scale. By F. L. Simanton. Pp. 183-204, pls. XXIV-XXV, fig. 1. Price, 10 cents.

Same, No. 6. May 8, 1916. Contents: Test of Three Large-Sized Reinforced-Concrete Slabs under Concentrated Loading. By A. T. Goldbeck and E. B. Smith.—Occurrence of Sterile Spikelets in Wheat. By A. E. Grantham and Frazier Groff. Pp. 205-250, pls. XXVI-XXVII, figs. 28. Price, 15 cents.

Same, No. 7. May 15, 1916. Contents: Effect of Cold-Storage Temperatures upon the Pupæ of the Mediterranean Fruit Fly. By E. A. Back and C. E. Pemberton.—Effect of Climatic Factors on the Hydrocyanic-Acid Content of Sorghum. By J. J. Willaman and R. M. West.—Egg and Manner of Oviposition of *Lyctus planicollis*. By Thomas E. Snyder. Pp. 251-276, pls. XXVII-XXXI, figs. 4. Price, 10 cents.

Same, No. 8. May 22, 1916. Contents: Hypoderma deformans, an Undescribed Needle Fungus of Western Yellow Pine. By James R. Weir.—Ornix geminatella, the Unspotted Tentiform Leaf Miner of Apple. By L. Haseman. Pp. 277-296, pls. XXXII-XXXIII, figs. 4. Price, 10 cents.

Same, No. 9. May 29, 1916. Contents: A Western Fieldrot of the Irish Potato Caused by *Fusarium radicicola*. By O. A. Pratt.—Comparative Study of the Root Systems and Leaf Areas of Corn and the Sorghums. By E. C. Miller.—Production of Clear and Sterilized Anti-Hog-Cholera Serum. By M. Dorset and R. R. Henley. Pp. 297-338, pls. XXXIV-XLIV, figs. 3. Price, 15 cents.

NOTE.—Beginning with Volume 5, The Journal of Agricultural Research will be issued weekly and distributed free *only* to the libraries of agricultural colleges and experiment stations, to large universities, technical schools, and such institutions as make suitable exchanges with the department. *It will not be sent free to individuals.* The Superintendent of Documents will receive subscriptions for this publication, the price being \$3 per year, 52 numbers.

**Experiment Station Record.** Vol. XXXIII, Index Number. E. W. Allen, Ph. D., Editor. Pp. xxi + 901-1000. Price, 15 cents.

Same, Vol. XXXIV, No. 7. May, 1916. Pp. 601-700. Price, 15 cents.

NOTE.—The Record is a technical review of the world's scientific literature pertaining to agriculture. It is not intended for general distribution, and its free distribution is restricted to persons connected with the agricultural colleges, experiment stations, and similar institutions, and to libraries and exchanges. It can not be sent free to individuals having no official connection with public institutions. The Superintendent of Documents will receive subscriptions for this publication, which is issued in two volumes a year, ten numbers each, at \$1 a volume.

**The Monthly Crop Report.** Vol. 2, No. 5, May, 1916. Pp. 41-48. (Bureau of Crop Estimates.)

Contains data relating to agriculture, including estimates of acreage, conditions, yield, prices, and value of crops and live stock. For free distribution.

#### SERVICE AND REGULATORY ANNOUNCEMENTS—FOR SALE ONLY.

These contain *only* information, instructions, and notices governing the enforcement of food and drugs act, meat inspection, 28-hour and quarantine laws, and the various regulations of the department. Issued monthly by certain bureaus. *Free distribution* is limited to persons in the employ of the department, to public officials whose duties render it necessary for them to have such information, to journals especially concerned, and to manufacturers and firms whose business is affected by same. Others desiring copies are respectfully referred to the Superintendent of Documents, Government Printing Office, who has them for sale *only*, at prices noted.

Bureau of Animal Industry. No. 108. April, 1916. Pp. 33-40. May 27, 1916. Price, 5 cents.

Bureau of Biological Survey. No. 9. Proposed Regulations for the Protection of Migratory Birds. Pp. 4. May 20, 1916. Price, 5 cents.

Bureau of Chemistry. No. 17. Pp. 35-41. May 12, 1916. Price, 5 cents.

Bureau of Chemistry. Supplement No. 15. [N. J. 4201-4250, 4089 corrected.] Pp. 317-371. May 19, 1916. Price, 10 cents.

Federal Horticultural Board. No. 27. April, 1916. Pp. 45-60. May 25, 1916. Price, 5 cents.

#### SOIL SURVEYS.

All requests for soil surveys are referred to the Bureau of Soils for attention, the distribution of same being controlled by that bureau.

**Soil Survey of Clay County, Georgia.** By William G. Smith and N. M. Kirk. Pp. 46, fig. 1, map. (From F. O. Soils, 1914.) Price, 15 cents.

**Soil Survey of Elkhart County, Indiana.** By Grove B. Jones, of the U. S. Department of Agriculture, and R. S. Hesler, of the Indiana Department of Geology. Pp. 28, fig. 1, map. (From F. O. Soils, 1914.) Price, 15 cents.

**Soil Survey of Lafayette Parish, Louisiana.** By A. H. Meyer and N. M. Kirk. Pp. 32, fig. 1, map. (From F. O. Soils, 1915.) Price, 15 cents.

**Soil Survey of Ramsey County, Minnesota.** By William G. Smith and N. M. Kirk. Pp. 37, figs. 2, map. (From F. O. Soils, 1914.) Price, 15 cents.

**Soil Survey of Johnson County, Missouri.** By B. W. Tillman, of the U. S. Department of Agriculture, and C. E. Deardorff, of the University of Missouri. Pp. 33, fig. 1, map. (From F. O. Soils, 1914.) Price, 15 cents.

**Soil Survey of Chautauqua County, New York.** By T. M. Morrison, of the U. S. Department of Agriculture, and C. C. Engle and G. L. Fuller, of the New York State College of Agriculture. Pp. 60, fig. 1, map. (From F. O. Soils, 1914.) Price, 15 cents.

**Soil Survey of Lincoln County, North Carolina.** By R. T. Avon Burke, of the U. S. Department of Agriculture, and L. L. Brinkley, of the North Carolina Department of Agriculture. Pp. 33, fig. 1, map. (From F. O. Soils, 1914.) Price, 15 cents.

#### PUBLICATIONS OF THE WEATHER BUREAU.

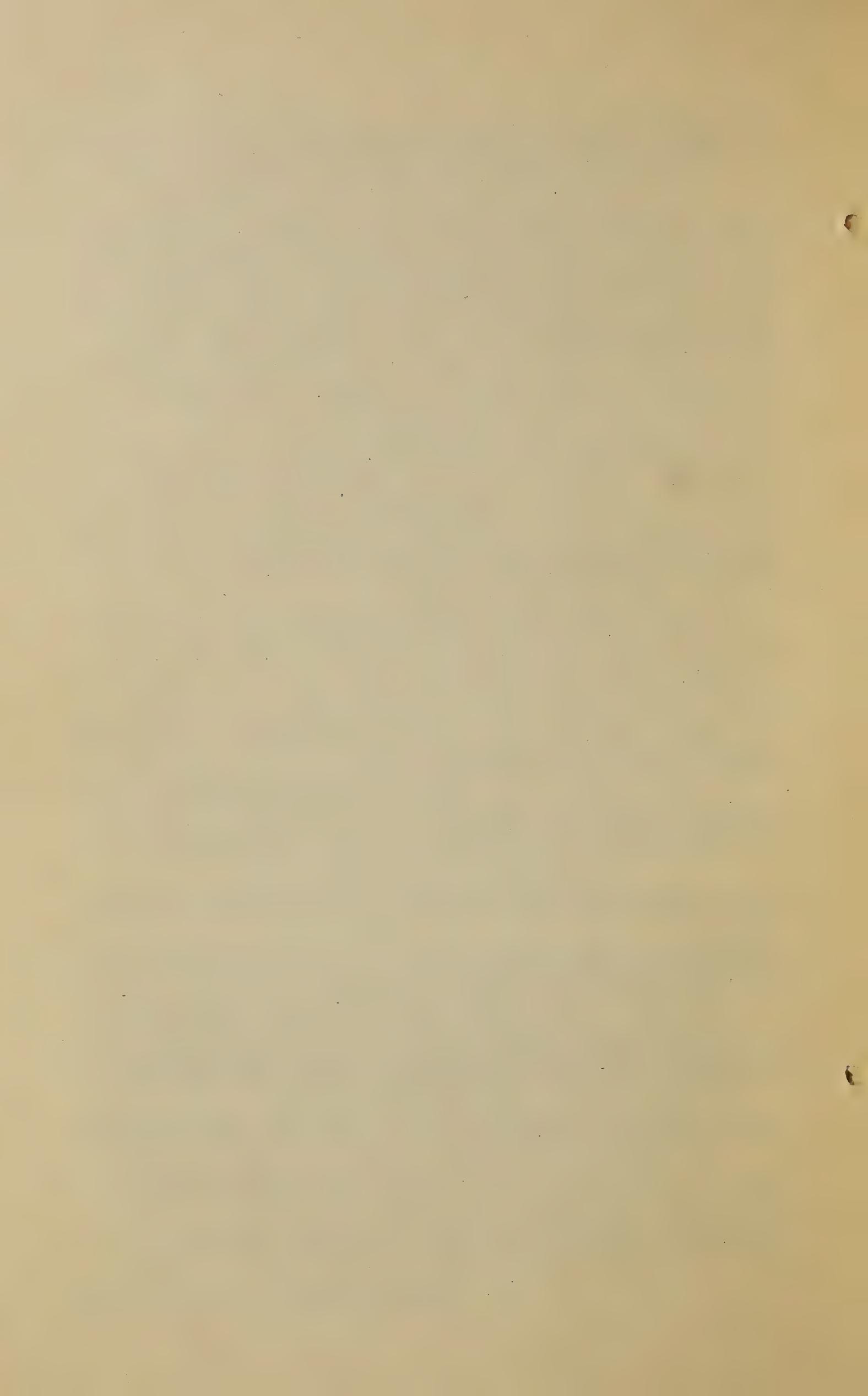
Publications of the Weather Bureau are obtainable only from the Chief of the Weather Bureau or the Superintendent of Documents, Government Printing Office, at the prices noted herein.

**Monthly Weather Review.** (For sale only.) Vol. 44, No. 2. February, 1916. [May 2, 1916.] Pp. 61-109, charts 9, figs. 11. Price, 25 cents a copy, \$2.50 a year. Payable to the Superintendent of Documents.

Special Articles: Solar and sky radiation measurements during February, 1916. By H. H. Kimball.—Arequipa pyrheliometry. By C. G. Abbot.—Horizontal rainbows on Lake Mendota. By Chancey Juday.—Halos at Ft. Worth, Tex., and their relation to the subsequent occurrence of precipitation. By H. H. Martin.—Origin and maintenance of the earth's electric charge. By W. F. G. Swann.—Meteorology of the moon. By Wm. H. Pickering.—Agricultural meteorology. By J. Warren Smith.—Breathing wells and pressure changes.—Severe ice storm in Michigan.—Arthur Williams Wright, 1836-1915.—Rivers and floods, February, 1916. By A. J. Henry.—Relation of precipitation to stream flow in Montana. By R. F. Young.

**National Weather and Crop Bulletin,** Nos. 7, 8, 9, 10, 11, May, 1916, reporting temperature, rainfall, and crop conditions throughout the United States. (Issued weekly, on Wednesday, April to October; monthly remainder of year.) Price, 25 cents a year.

Jos. A. ARNOLD,  
Editor and Chief Division Publications.



This circular will be sent regularly to all who apply for it.

# United States Department of Agriculture,

WASHINGTON, D. C., June 30, 1916.

## MONTHLY LIST OF PUBLICATIONS.

[JUNE, 1916.]

### HOW TO SECURE PUBLICATIONS.

A copy of any of the publications listed herein, including those with price named, except the Journal of Agricultural Research, Experiment Station Record, Service and Regulatory Announcements, and publications of the Weather Bureau, may be obtained free upon application to the Editor and Chief of the Division of Publications, United States Department of Agriculture, Washington, D. C., as long as the department's supply lasts.

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### FARMERS' BULLETINS—FOR FREE DISTRIBUTION.

No price is quoted for Farmers' Bulletins for the reason that the department's supply of the current numbers is ordinarily sufficient to make it possible to send them free to all applicants.

**Measuring and Marketing Woodlot Products.** By Wilbur R. Mattoon and William B. Barrows, Forest Examiners. Pp. 48, figs. 13. Contribution from the Forest Service. June 29, 1916. (**Farmers' Bulletin 715.**)

Suitable for general distribution, and will be helpful to farmers in selling woodlot products.

**Management of Sandy-Land Farms in Northern Indiana and Southern Michigan.** By J. A. Drake, Agriculturist, Office of Farm Management. Pp. 28, figs. 3. Contribution from the Office of Farm Management, Office of the Secretary. June 9, 1916. (**Farmers' Bulletin 716.**)

This bulletin, while applying particularly to areas where sandy lands occur in southern Michigan, northern Indiana, and a part of northwestern Ohio, should prove of interest to farmers occupying sandy lands in other portions of the country not too far north to permit of maturing the crops recommended.

**Prevention of Losses of Live Stock from Plant Poisoning.** By C. Dwight Marsh, Physiologist in Poisonous-Plant Investigations, Pathological Division. Pp. 11. Contribution from the Bureau of Animal Industry. June 2, 1916. (**Farmers' Bulletin 720.**)

Of especial interest to western ranchers and stock raisers. Supersedes Farmers' Bulletin 536 on Stock Poisoning Due to Scarcity of Food.

**The Feeding of Grain Sorghums to Live Stock.** By George A. Scott, Scientific Assistant, Animal Husbandry Division. Pp. 15, figs. 5. Contribution from the Bureau of Animal Industry. June 7, 1916. (**Farmers' Bulletin 724.**)

This bulletin will be of interest to cattle feeders and farmers generally in the semiarid regions where grain sorghums do better than corn.

**Natal Grass: A Southern Perennial Hay Crop.** By S. M. Tracy, Agronomist, Forage-Crop Investigations. Pp. 16, figs. 4. Contribution from the Bureau of Plant Industry. June 8, 1916. (**Farmers' Bulletin 726.**)

Suitable for distribution in South Atlantic and Gulf States and southwestern California and New Mexico.

**Growing Fruit for Home Use in the Great Plains Area.** By H. P. Gould, Pomologist in Charge of Fruit-Production Investigations, Office of Horticultural and Pomological Investigations, and Oliver J. Grace, Superintendent, Akron Field Station, Dry-Land Agriculture Investigations. Pp. 40, figs. 25. Contribution from the Bureau of Plant Industry. June 30, 1916. (**Farmers' Bulletin 727.**)

Is intended especially for those in the Great Plains area who are interested in growing fruit for home use, but some parts of it, especially the discussion about pruning and shaping trees, are of general interest to people living in other sections of the country.

**Dewberry Culture.** By George M. Darrow, Scientific Assistant, Office of Horticultural and Pomological Investigations. Pp. 19, figs. 12. Contribution from the Bureau of Plant Industry. June 12, 1916. (**Farmers' Bulletin 728.**)  
For general distribution.

**Button Clover.** By Roland McKee, Assistant Agrostologist, Forage-Crop Investigations. Pp. 11, figs. 3. Contribution from the Bureau of Plant Industry. June 2, 1916. (**Farmers' Bulletin 730.**)  
Suitable for distribution in the South Atlantic and Gulf States and the Pacific Coast States.

**The Corn and Cotton Wireworm in Its Relation to Cereal and Forage Crops, with Control Measures.** By Edmund H. Gibson, Scientific Assistant, Cereal and Forage Insect Investigations. Pp. 8, figs. 3. Contribution from the Bureau of Entomology. June 9, 1916. (**Farmers' Bulletin 733.**)

The object of this bulletin is to set forth in a popular form what is known of the habits of the destructive corn and cotton wireworm, in order that farmers and planters may more effectively carry out control measures and be able better to handle infested areas that the injury may be reduced to a minimum.

**Flytraps and Their Operation.** By F. C. Bishopp, Entomological Assistant. Pp. 14, fig. 7. Contribution from the Bureau of Entomology. June 10, 1916. (**Farmers' Bulletin 734.**)

Is intended to give directions for the use of a supplementary means of controlling flies; it is adapted to all parts of the United States.

**The Red Spider on Cotton and How to Control it.** By E. A. McGregor, Entomological Assistant, Southern Field Crop Insect Investigations. Pp. 12, figs. 10. Contribution from the Bureau of Entomology. June 12, 1916. (**Farmers' Bulletin 735.**)

For distribution in cotton growing States.

**The Clover Leafhopper and Its Control in the Central States.** By Edmund H. Gibson, Scientific Assistant, Cereal and Forage Insect Investigations. Pp. 8, figs. 5. Contribution from the Bureau of Entomology. June 26, 1916. (**Farmers' Bulletin 737.**)

It is the purpose of this bulletin to set forth such facts as will familiarize the farmer with the various stages in the development of the clover leafhopper, its habits, and mode of attack, together with detailed information as to the control of outbreaks in alfalfa and clover fields.

**Cereal Crops in the Panhandle of Texas.** By John F. Ross, Farm Superintendent, Office of Cereal Investigations. Pp. 16, figs. 5. Contribution from the Bureau of Plant Industry. June 15, 1916. (**Farmers' Bulletin 738.**)

Of interest to farmers and prospective settlers in the Texas Panhandle country.

**Cutworms and Their Control in Corn and Other Cereal Crops.** By W. R. Walton and J. J. Davis, Entomological Assistants, Cereal and Forage Insect Investigations. Pp. 4, fig. 1. Contribution from the Bureau of Entomology. June 1, 1916. (**Farmers' Bulletin 739.**)

Suitable for general distribution.

**The White-Pine Blister Rust.** By Perley Spaulding, Pathologist, Office of Investigations in Forest Pathology. Pp. 15, pl. 1, fig. 4. Contribution from the Bureau of Plant Industry. June 9, 1916. (**Farmers' Bulletin 742.**)

Suitable for general distribution.

#### DEPARTMENTAL BULLETINS—TECHNICAL.

The publications listed below are technical or scientific treatises or bulletins applying to a special industry or locality. The edition is limited, but they will be furnished free to persons who can use such specialized information as long as the supply lasts. However, to insure prompt receipt, remit price to the Superintendent of Documents.

**Mistletoe Injury to Conifers in the Northwest.** By James R. Weir, Forest Pathologist, Office of Investigations in Forest Pathology. Pp. 39, pls. 4, figs. 27. Contribution from the Bureau of Plant Industry. (Professional Paper.) June 17, 1916. (**Department Bulletin 360.**) Price, 15 cents.

Describes injury caused by, and methods of control of this pest.

**Carrying Capacity of Grazing Ranges in Southern Arizona.** By E. O. Wooton, Agriculturist, Office of Farm Management. Pp. 40, pls. 10, figs. 4. Contribution from the Bureau of Plant Industry. (Professional Paper.) June 23, 1916. (**Department Bulletin 367.**) Price, 15 cents.

Of interest to stock raisers and prospective settlers in southern Arizona.

#### MISCELLANEOUS.

**Report of the Hawaii Agricultural Experiment Station, 1915.** Pp. 73, pl. 9. June 23, 1916.  
Price, 15 cents.

**A Systematic Account of the Prairie-Dogs.** By N. Hollister, Assistant Curator of Mammals, United States National Museum. Pp. 37, pls. 7, figs. 2. June 20, 1916. (**North American Fauna No. 40.**) Price, 15 cents.

**Results of a Survey of State Marketing Activities Throughout the United States.** Pp. 7. June 5, 1916. (**Document No. 3, Office of Markets and Rural Organization.**)

## REPORTS.

**Meat Situation in the United States. Part 4. Utilization and Efficiency of Available American Feed Stuffs.** By W. F. Ward and S. H. Ray, Animal Husbandry Division. Pp. 27. Contribution from the Bureau of Animal Industry, Cooperating with the Bureau of Crop Estimates. June 8, 1916. (Report No. 112, Office of the Secretary.) Price, 5 cents.

NOTE.—One of five reports to be issued showing the results of various independent inquiries dealing with several phases of the meat industry, undertaken by specialists of the department, at the suggestion of a committee appointed in 1914 by the Secretary to consider the economics of the meat situation; the other four reports will be published as Reports Nos. 109, 110, 111, and 113, Office of the Secretary, and notice of their issue will appear in the monthly list.

## SERIALS.

**Journal of Agricultural Research.** (Issued weekly. For sale only.)

Vol. 6, No. 10. June 5, 1916. Contents: Silver-Scurf of the Irish Potato Caused by *Spondylocladium atrovirens*. By Eugene S. Schultz.—Woolly Pear Aphis. By A. C. Baker and W. M. Davidson.—Pathological Histology of Strawberries Affected by Species of *Botrytis* and *Rhizopus*. By Neil E. Stevens.—Life Histories and Methods of Rearing Hessian-Fly Parasites. By C. M. Packard. Pp. 339-381, pls. XLV-LII, fig. 1. Price, 20 cents.

Same, No. 11. June 12, 1916. Contents: Effect of Röntgen Rays on the Tobacco, or Cigarette, Beetle and the Results of Experiments with a New Form of Röntgen Tube. By G. A. Runner.—Stimulating Influence of Arsenic upon the Nitrogen-Fixing Organisms of the Soil. By J. E. Greaves.—Transmission and Control of Bacterial Wilt of Cucurbits. By Frederick V. Rand and Ella M. A. Enlow. Pp. 383-434, pls. LIII-LIV, figs. 8. Price, 15 cents.

Same, No. 12. June 19, 1916. Contents: Correlated Characters in Maize Breeding. By G. N. Collins.—Comparative Study of the Amount of Food Eaten by Parasitized and Nonparasitized Larvae of *Cirphis unipuncta*. By Daniel G. Tower.—Aleyrodidae, or White Flies Attacking the Orange, with Descriptions of Three New Species of Economic Importance. By A. L. Quaintance and A. C. Baker. Pp. 435-472, pls. LV-LXIX, figs. 3. Price, 25 cents.

Same, No. 13. June 26, 1916. Contents: Relative Water Requirement of Corn and the Sorghums. By Edwin C. Miller.—Availability of Mineral Phosphates for Plant Nutrition. By W. L. Burlison. Pp. 473-514, pls. LXX-LXXX, fig. 1. Price, 20 cents.

NOTE.—Beginning with Volume 5, The Journal of Agricultural Research will be issued weekly and distributed free *only* to the libraries of agricultural colleges and experiment stations, to large universities, technical schools, and such institutions as make suitable exchanges with the department. *It will not be sent free to individuals.* The Superintendent of Documents will receive subscriptions for this publication, the price being \$3 per year, 52 numbers.

**The Monthly Crop Report.** Vol. 2, No. 6, June, 1916. Pp. 49-60. (Bureau of Crop Estimates.)

Contains data relating to agriculture, including estimates of acreage, conditions, yield, prices, and value of crops and live stock. For free distribution.

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Bureau of Animal Industry. No. 109. May, 1916. Pp. 41-48. June 17, 1916. Price, 5 cents.

Bureau of Chemistry. Supplement No. 16. [N. J. 4251-4300.] Pp. 373-425. June 13, 1916. Price, 10 cents.

Federal Horticultural Board. No. 28. May, 1916. Pp. 61-72. June 23, 1916. Price, 5 cents.

Federal Horticultural Board. Index to Service and Regulatory Announcements for 1915. Pp. 101-106. June 10, 1916. Price, 5 cents.

## SOIL SURVEYS.

All requests for soil surveys are referred to the Bureau of Soils for attention, the distribution of same being controlled by that bureau.

**Soil Survey of Turner County, Georgia.** By E. C. Hall, of the U. S. Department of Agriculture, and David D. Long, of the Georgia State College of Agriculture. Pp. 28, fig. 1, map. (From F. O. Soils, 1915.) Price, 15 cents.

**Soil Survey of Webster County, Iowa.** By J. O. Veatch, of the U. S. Department of Agriculture, and F. B. Howe, of the Iowa Agricultural Experiment Station. Pp. 44, fig. 1, map. (From F. O. Soils, 1914.) Price, 15 cents.

**Soil Survey of Jessamine County, Kentucky.** By Risden T. Allen. Pp. 20, fig. 1, map. (From F. O. Soils, 1915.) Price, 15 cents.

- Soil Survey of Jefferson Davis County, Mississippi.** By T. M. Bushnell, in Charge, and L. Vincent Davis. Pp. 27, fig. 1, map. (From F. O. Soils, 1915.) Price, 15 cents.
- Soil Survey of Pettis County, Missouri.** By H. H. Krusekopf, of the University of Missouri, and R. F. Rogers, of the U. S. Department of Agriculture. Pp. 41, fig. 1, map. (From F. O. Soils, 1914.) Price, 15 cents.
- Soil Survey of Gage County, Nebraska.** By A. H. Meyer and R. R. Burn, of the U. S. Department of Agriculture, and N. A. Bengtson, of the Nebraska Soil Survey. Pp. 42, fig. 1, map. (From F. O. Soils, 1914.) Price, 15 cents.
- Soil Survey of Wake County, North Carolina.** By L. L. Brinkley, of the North Carolina Department of Agriculture, and N. M. Kirk, Riden T. Allen, and B. B. Derrick, of the U. S. Department of Agriculture. Pp. 45, fig. 1, map. (From F. O. Soils, 1914.) Price, 15 cents.
- Soil Survey of Geauga County, Ohio.** By Charles N. Mooney, in Charge, and H. G. Lewis, of the U. S. Department of Agriculture, and Carl W. Shiffler and Oliver Gossard, of the Ohio Agricultural Experiment Station. Pp. 37, fig. 1, map. (From F. O. Soils, 1915.) Price, 15 cents.
- Soil Survey of Frederick County, Virginia.** By J. B. R. Dickey and W. B. Cobb. Pp. 48, fig. 1, map. (From F. O. Soils, 1914.) Price, 15 cents.

#### PUBLICATIONS OF THE WEATHER BUREAU.

Publications of the Weather Bureau are obtainable only from the Chief of the Weather Bureau or the Superintendent of Documents, Government Printing Office, at the prices noted herein.

**Annual Report of Chief of Weather Bureau, 1914-1915.** [Administrative report, fiscal year 1915, with meteorological tables, calendar year 1914.] 1916. [4 pts.] Pp. 276, charts, 4. 4to. Price, 60 cents, cloth.

**Monthly Weather Review.** (For sale only.) Vol. 44, No. 3. March, 1916. [May 31, 1916.] Pp. 111-175, charts 9, figs. 14. Price, 25 cents a copy, \$2.50 a year. Payable to the Superintendent of Documents.

Special Articles: Solar and sky radiation measurements during March, 1916. By H. H. Kimball.—Convection in the upper regions of the sun's atmosphere. By F. Henroteau.—Seesaw between Weddell Sea and Ross Sea. By R. C. Mossman.—Atmospheric pollution in English and Scottish towns. By J. B. C. Kershaw.—Atmospheric pollution. By W. P. Wynne.—Some problems of atmospheric electricity. By G. C. Simpson.—Rainfall data of Berkeley, Cal.—By W. G. Reed.—Distribution of cyclonic precipitation. By T. Terada.—Fire-weather warnings. By H. S. Williams.—Disappearance of snow in the high Sierra Nevada of California. By A. J. Henry.—Southern Appalachian earthquake of Feb. 21, 1916. By W. J. Humphreys.—Observations of an earthquake in a telescope. By W. P. Hoge.

**National Weather and Crop Bulletin,** Nos. 12, 13, 14, 15, June, 1916, reporting temperature, rainfall, and crop conditions throughout the United States. (Issued weekly, on Wednesday, April to October; monthly remainder of year.) Price, 25 cents a year.

Jos. A. ARNOLD,  
*Editor and Chief Division Publications.*

This circular will be sent regularly to all who apply for it.

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# United States Department of Agriculture,★

WASHINGON, D. C., July 31, 1916.

## MONTHLY LIST OF PUBLICATIONS.

[JULY, 1916.]

### HOW TO SECURE PUBLICATIONS.

A copy of any of the publications listed herein, including those with price named, except the Journal of Agricultural Research, Experiment Station Record, Service and Regulatory Announcements, and publications of the Weather Bureau, may be obtained free upon application to the Editor and Chief of the Division of Publications, United States Department of Agriculture, Washington, D. C., as long as the department's supply lasts.

After this department's supply of the publications listed below is exhausted, those publications of which the price is indicated can still be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C., but by purchase only, and at the prices noted herein.

Send all remittances to the Superintendent of Documents direct. His office is not a part of the Department of Agriculture.

### FARMERS' BULLETINS—FOR FREE DISTRIBUTION.

No price is quoted for Farmers' Bulletins for the reason that the department's supply of the current numbers is ordinarily sufficient to make it possible to send them free to all applicants.

**Corn Culture in the Southeastern States.** By C. H. Kyle, Assistant physiologist, Office of Corn Investigations. Pp. 19, figs. 11. Contribution from the Bureau of Plant Industry. July 19, 1916. (**Farmers' Bulletin 729.**)

For distribution in North Carolina, South Carolina, Georgia, Florida, and Alabama.

**Ginseng Diseases and Their Control.** By H. H. Whetzel, Collaborator, J. Rosenbaum, Mycologist, J. W. Brann, formerly Agent, and J. A. McClintock, Collaborator, Office of Cotton and Truck Disease Investigations. Pp. 23, figs. 26. Contribution from the Bureau of Plant Industry. July 17, 1916. (**Farmers' Bulletin 736.**)

Contains the results of cooperative work between the Bureau of Plant Industry, the New York (Cornell) Agricultural Experiment Station, the Wisconsin Agricultural Experiment Station, and the Michigan Agricultural Experiment Station.

**House Ants: Kinds and Methods of Control.** By C. L. Marlatt, Entomologist and Assistant Chief. Pp. 12, figs. 5. Contribution from the Bureau of Entomology. July 8, 1916. (**Farmers' Bulletin 740.**)

For general distribution.

**The Alfalfa Weevil and Methods of Controlling It.** By George I. Reeves and Philip B. Miles, Entomological Assistants, and Thomas R. Chamberlin, Sterling J. Snow, and Luther J. Bower, Scientific Assistants, Cereal and Forage Insect Investigations. Pp. 16, figs. 7. Contribution from the Bureau of Entomology. July 17, 1916. (**Farmers' Bulletin 741.**)

Describes the work and spread of the most dreaded pest of alfalfa in the United States. It is of interest in the region west of the Mississippi River, particularly Utah and the adjacent States.

**The Feeding of Dairy Cows.** By Helmer Rabild, H. P. Davis, and W. K. Brainerd, of the Dairy Division. Pp. 23. Contribution from the Bureau of Animal Industry. July 24, 1916. (**Farmers' Bulletin 743.**)

Contains suggestions for both summer and winter feeding and information concerning balanced rations composed of different feeding stuffs.

**The Farmer's Income.** By E. A. Goldenweiser, Statistician. Pp. 8, fig. 1. Contribution from the Office of Farm Management, Office of the Secretary. July 6, 1916. (**Farmers' Bulletin 746.**)

Is based on a circular on this subject by W. J. Spillman, issued July 19, 1913, on Bulletin 635, entitled "What the Farm Contributes Directly to the Farmer's Living," by W. C. Funk, and on Statistics collected by the Office of Farm Management and the Demonstration Service, of this department, by the Bureau of the Census, the Bureau of Labor, and the Immigration Commission.

**A Simple Steam Sterilizer for Farm Dairy Utensils.** By S. Henry Ayers, Bacteriologist, and George B. Taylor, Market Milk Specialist, Dairy Division. Pp. 11, figs. 8. Contribution from the Bureau of Animal Industry. July 22, 1916. (**Farmers' Bulletin 748.**)

For general distribution.

#### DEPARTMENTAL BULLETINS—TECHNICAL.

The publications listed below are technical or scientific treatises or bulletins applying to a special industry or locality. The edition is limited, but they will be furnished free to persons who can use such specialized information as long as the supply lasts. However, to insure prompt receipt, remit price to the Superintendent of Documents.

**The Results of Physical Tests of Road-Building Rock.** By Prevost Hubbard, Chemical Engineer, and Frank H. Jackson, Jr., Assistant Testing Engineer. Pp. 100, chart, 1. Contribution from the Office of Public Roads and Rural Engineering. (Professional Paper.) July 20, 1916. (**Department Bulletin 370.**) Price, 15 cents.

Of interest to Road Engineers and Contractors.

**Cotton Boll-Weevil Control in the Mississippi Delta, With Special Reference to Square Picking and Weevil Picking.** By B. R. Coad, Entomological Assistant, Southern Field Crop Insect Investigations. Pp. 12. Contribution from the Bureau of Entomology. July 8, 1916. (**Department Bulletin 382.**) Price, 5 cents.

Is intended to give practical advice to the cotton raisers of the Mississippi Delta on the subject of controlling the boll weevil.

**School Credit for Home Practice in Agriculture.** By F. E. Heald, Specialist in Agricultural Education. Pp. 27. Contribution from the States Relations Service. (Professional Paper.) July 25, 1916. (**Department Bulletin 385.**) Price, 5 cents.

Is intended to assist superintendents and teachers of rural schools who desire to use home practice in agriculture as an educational feature, giving proper rank and credit on the school records.

**Costs and Sources of Farm-Mortgage Loans in the United States.** By C. W. Thompson, Specialist in Rural Organization. Pp. 16, pls. 5. Contribution from the Office of Markets and Rural Organization. July 31, 1916. (**Department Bulletin 384.**) Price, 10 cents.

The aim of this bulletin is to indicate briefly some of the results obtained from a study bearing on interest rates and commissions on farm-mortgage loans and the sources of such loans in the United States.

#### MISCELLANEOUS.

**Automobile Registrations, Licenses, and Revenues in the United States, 1915.** (Prepared by the Division of Road Economics, Office of Public Roads and Rural Engineering.) Pp. 15. July 6, 1916. (**Circular No. 59, Office of the Secretary.**) Price, 5 cents.

**Amortization Methods for Farm Mortgage Loans.** By Leon E. Truesdell, Field Assistant in Rural Organization, and C. W. Thompson, Specialist in Rural Organization. Pp. 12. July 14, 1916. (**Circular No. 60, Office of the Secretary.**) Price, 5 cents.

Should be of interest to all farmers who are contemplating the borrowing of money to be repaid on the amortization plan, as well as to others who are concerned with the problems of farm mortgage credit.

**Factors of Apportionment to States Under Federal Aid Road Act Appropriation for the Fiscal Year 1917.** Pp. 2. July 21, 1916. (**Circular 62, Office of the Secretary,**) Price, 5 cents.

**Irrigated Pastures for Northern Reclamation Projects.** By F. D. Farrell, Agriculturist in Charge. Pp. 16, figs. 2. July 26, 1916. (**D. R. P. 2, Bureau of Plant Industry.**) Price, 5 cents.

Not suited to conditions in California, Nevada, Arizona, New Mexico, and Texas.

## REPORTS.

**Report of the Guam Agricultural Experiment Station, 1915.** Pp. 43, pls. 7; figs. 4. July 8, 1916. Price, 10 cents.

**Meat Situation in the United States.** Pt. 1. **Statistics of Live Stock, Meat Production and Consumption, Prices, and International Trade for Many Countries.** By George K. Holmes, Bureau of Crop Estimates. Pp. 307, figs. 32. July 3, 1916. (**Report 109, Office of the Secretary.**) Price, 35 cents.

**Meat Situation in the United States.** Pt. 2. **Live Stock Production in the Eleven Far Western Range States.** Based on Reports from Stockmen and County Correspondents. By Will C. Barnes and James T. Jardine, Forest Service. Pp. 100, pls. 4, maps 2. July 1, 1916. (**Report 110, Office of the Secretary.**) Price, 15 cents.

**Meat Situation in the United States.** Pt. 3. **Methods and Cost of Growing Beef Cattle in the Corn Belt States.** By J. S. Cotton and Morton C. Cooper, Office of Farm Management, and W. F. Ward, Bureau of Animal Industry. Pp. 64, pls. 5, figs. 2. July 1, 1916. (**Report 111, Office of the Secretary.**) Price, 15 cents.

NOTE.—These reports show the results of various independent inquiries dealing with several phases of the meat industry undertaken by specialists of the Department, at the suggestion of a committee appointed in 1914 by the Secretary to consider the economics of the meat situation.

The Department's supply is exhausted; therefore send remittances to the Superintendent of Documents direct, and not to this Office.

## SERIALS.

**Journal of Agricultural Research.** (Issued weekly. For sale only.)

Vol. 6, No. 14. July 3, 1916. Contents: California Lacewing Fly. By V. L. Wildermuth.—Rape as Material for Silage. By A. R. Lamb and John M. Evvard.—Effect of Autolysis upon Muscle Creatin. By Ralph Hoagland and C. N. McBryde. Pp. 515-547, figs. 7. Price, 10 cents.

**Same,** No. 15. July 10, 1916. Contents: Storage-Rots of Economic Aroids. By L. L. Harter.—Experiments with Clean Seed Potatoes on New Land in Southern Idaho. By O. A. Pratt. Pp. 549-575, pls. LXXXI-LXXXIII, fig. 1. Price, 15 cents.

**Same,** No. 16. July 17, 1916. Contents: Digestibility of Very Young Veal. By C. F. Langworthy and A. D. Holmes.—Influence of Calcium and Magnesium Compounds on Plant Growth. By F. A. Wyatt.—Larval Characters and Distribution of Two Species of Diatraea. By T. E. Holloway. Pp. 577-626, pls. LXXXIV-LXXXIX, fig. 1. Price, 15 cents.

**Same,** No. 17. July 24, 1916. Contents: The Disease of Potatoes Known as "Leak." By Lon A. Hawkins.—Digestibility of Hard Palates of Cattle. By C. F. Langworthy and A. D. Holmes.—Some Properties of the Virus of the Mosaic Disease of Tobacco. By H. A. Allard. Pp. 627-674, pls. XC-XCI, fig. 1. Price, 15 cents.

NOTE.—Beginning with Volume 5, The Journal of Agricultural Research will be issued weekly and distributed free *only* to the libraries of agricultural colleges and experiment stations, to large universities, technical schools, and such institutions as make suitable exchanges with the department. *It will not be sent free to individuals.* The Superintendent of Documents will receive subscriptions for this publication, the price being \$3 per year, 52 numbers.

**Experiment Station Record.** Vol. XXXIV, No. 8, June, 1916. E. W. Allen, Ph. D., Editor. Pp. 701-800. Price, 15 cents.

**Same,** Vol. XXXIV, No. 9. Abstract Number. Pp. 801-900. Price, 15 cents.

NOTE.—The record is a technical review of the world's scientific literature pertaining to agriculture. It is not intended for general distribution, and its free distribution is restricted to persons connected with the agricultural colleges, experiment stations, and similar institutions, and to libraries and exchanges. It can not be sent free to individuals having no official connection with public institutions. The Superintendent of Documents will receive subscriptions for this publication, which is issued in two volumes a year, ten numbers each, at \$1 a volume.

**The Monthly Crop Report.** Vol. 2, No. 7, July, 1916. Pp. 61-72. (Bureau of Crop Estimates.)

Contains data relating to agriculture, including estimates of acreage, conditions, yield, prices, and value of crops and live stock. For free distribution.

## SOIL SURVEYS.

All requests for soil surveys are referred to the Bureau of Soils for attention, the distribution of same being controlled by that bureau.

**Soil Survey of Walker County, Alabama.** By J. O. Veatch, of the U. S. Department of Agriculture, in Charge, and A. M. O'Neal, Jr., and J. F. Stroud, of the Alabama Department of Agriculture and Industries. Pp. 30, fig. 1, map. (From F. O. Soils, 1915.) Price, 15 cents.

**Soil Survey of Polk County, Georgia.** By David D. Long, of the Georgia State College of Agriculture, and Mark Baldwin, of the U. S. Department of Agriculture. Pp. 46, fig. 1, map. (From F. O. Soils, 1914.) Price, 15 cents.

**Soil Survey of Pennington County, Minnesota.** By William G. Smith, N. M. Kirk, and Freeman Ward. Pp. 28, fig. 1, map. (From F. O. Soils, 1914.) Price, 15 cents.

**Soil Survey of Roger Mills County, Oklahoma.** By J. A. Kerr, J. H. Agee, and E. C. Hall. Pp. 32, fig. 1, map. (From F. O. Soils, 1914.) Price, 15 cents.

**Soil Survey of Lancaster County, Pennsylvania.** By B. D. Gilbert and W. B. Cobb, of the U. S. Department of Agriculture, and Earl L. Moffitt and J. F. Cox, of the Pennsylvania State College. Pp. 70, fig. 1, map. (From F. O. Soils, 1914.) Price, 15 cents.

**Soil Survey of Brazos County, Texas.** By J. O. Veatch and C. S. Waldrop. Pp. 53, fig. 1, map. (From F. O. Soils, 1914.) Price, 15 cents.

## PUBLICATIONS OF THE WEATHER REVIEW.

Publications of the Weather Bureau are obtainable only from the Chief of the Weather Bureau or the Superintendent of Documents, Government Printing Office, at the prices noted herein.

**Monthly Weather Review.** (For sale only.) Vol. 44, No. 4. April, 1916. [July 1, 1916.] Pp. 177-242, charts 9, figs. 13. Price, 25 cents a copy, \$2.50 a year. Payable to the Superintendent of Documents.

Special articles: Solar and sky radiation measurements during April, 1916. By H. H. Kimball.—Total radiation received on a horizontal surface from the sun and sky at Madison, Wis., April, 1911, to March, 1916. By H. H. Kimball and E. R. Miller.—Local circulation of the atmosphere. By W. H. Dines.—The planetary system of convection. By W. R. Blair.—The average internal curve and its application to meteorological phenomena. By W. J. Spillman, H. R. Tolley, and W. G. Reed.—A correlation between the rainfall of North and South America. By H. Helm Clayton.—Report of the meteorological station at Berkeley, Cal., 1914. By W. G. Reed.—A centigrade thermometer scale preferred.—Marcellus Hartley Memorial Medal, 1916.—Use of "Indian summer" in 1778?—Need of Pan American meteorological cooperation.—Symons Memorial Medal, 1912.

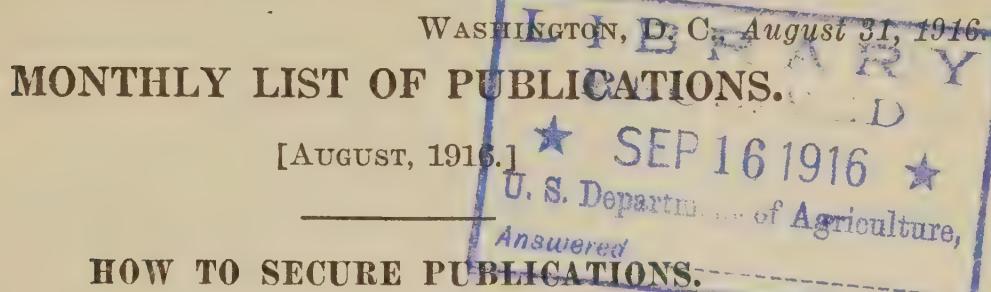
**Daily River Stages at River Gage Stations on the Principal Rivers of the United States.** By Alfred J. Henry, Professor of Meteorology. Pp. 176. 4to. Price, 25 cents.

**National Weather and Crop Bulletin,** Nos. 16, 17, 18, 19, July, 1916, reporting temperature, rainfall, and crop conditions throughout the United States. (Issued weekly, on Wednesday, April to October; monthly remainder of year.) Price, 25 cents a year.

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### SPECIAL NOTICE.

An increasing number of requests for publications is being received daily in this division with incomplete addresses. Many correspondents fail to sign their names. Some do not give post-office address. Persons living in large cities fail to furnish the street address; and some give as the post-office address the name of an office that has been discontinued for years. The department is unable to handle correspondence unless the signature is legible and the post-office address given in full, with street number or rural route number, as the case may be. Correspondents are therefore earnestly requested to see that the complete address is given in all communications addressed to this department.

### FARMERS' BULLETINS—FOR FREE DISTRIBUTION.

No price is quoted for Farmers' Bulletins for the reason that the department's supply of the current numbers is ordinarily sufficient to make it possible to send them free to all applicants.

**Waste Land and Wasted Land on Farms.** By James S. Ball, Assistant in Farm Accounting. Pp. 18, figs. 12. Contribution from the Office of Farm Management. Aug. 15, 1916. (**Farmers' Bulletin 745.**)

The results of this study, based on area records from 1,703 farms distributed throughout nine States, serve to call attention to the fact that there are certain portions of any farm which contribute nothing to the farm income, and to suggest various ways through which more or less of such nonproductive land may be reclaimed on the average farm.

**Grains for the Montana Dry Lands.** By N. C. Donaldson, Scientific Assistant, Office of Cereal Investigations. Pp. 23, figs. 11. Contribution from the Bureau of Plant Industry. Aug. 12, 1916. (**Farmers' Bulletin 749.**)

Of interest to farmers and prospective settlers in Montana.

**Peanut Oil.** By H. C. Thompson, Horticulturist, Office of Horticultural and Pomological Investigations, Bureau of Plant Industry, and H. S. Bailey, Food-Investigation Chemist, Bureau of Chemistry. Pp. 16. Contribution from the Bureau of Plant Industry and the Bureau of Chemistry. Aug. 4, 1916. (**Farmers' Bulletin 751.**)

Will be of interest to owners and managers of oil mills, oil dealers, and business men, and to farmers who are growing or who contemplate growing peanuts.

## DEPARTMENT BULLETINS.—TECHNICAL.

The publications listed below are technical or scientific treatises or bulletins applying to a special industry or locality. The edition is limited, but they will be furnished free to persons who can use such specialized information as long as the supply lasts. However, to insure prompt receipt, remit price to the Superintendent of Documents.

**Comparison of the Bacterial Count of Milk With the Sediment or Dirt Test.**

By H. C. Campbell, Expert in Milk Hygiene, Pathological Division. Pp. 7, pl. 1. Contribution from the Bureau of Animal Industry. (Professional Paper.) June 29, 1916. (**Department Bulletin 361.**) Price, 5 cents.

Of special interest to milk inspectors and pure food officials.

**Brick Roads.** By Vernon M. Peirce, Chief of Construction, and Charles H. Moorefield, Senior Highway Engineer. Pp. 40, pls. 12, figs. 4. Contribution from the Office of Public Roads and Rural Engineering. (Professional Paper.) Aug. 25, 1916. (**Department Bulletin 373.**) Price, 15 cents.

This is a revision of Department Bulletin 246, entitled Vitrified Brick Pavements for Country Roads.

**Disadvantages of Selling Cotton in the Seed.** By Charles F. Creswell, Scientific Assistant. Pp. 19. Contribution from the Office of Markets and Rural Organization. Aug. 9, 1916. (**Department Bulletin 375.**) Price, 5 cents.

Should be of interest to cotton producers, ginners, and buyers generally.

**The Argentine Ant: Distribution and Control in the United States.** By Ernest R. Barber, Scientific Assistant, Southern Field Crop Insect Investigations. Pp. 23, figs. 4. Contribution from the Bureau of Entomology. (Professional Paper.) Aug. 18, 1916. (**Department Bulletin 377.**) Price, 5 cents.

Gives life history and habits and methods of control of this insect. Of especial interest to residents of southern States.

**Fish Meal: Its Use as a Stock and Poultry Food.** By F. C. Weber, Chemist in Charge, Animal Physiological Chemical Laboratory, Bureau of Chemistry. Pp. 21. Contribution from the Bureau of Chemistry and the Bureau of Animal Industry. (Professional Paper.) Aug. 22, 1916. (**Department Bulletin 378.**) Price, 5 cents.

The object of this publication is to set forth the value of fish meal as a feed for domestic animals, in order to stimulate its more general use as a supplementary stock feed and to encourage its manufacture for that purpose.

**Dust Explosions and Fires in Grain Separators in the Pacific Northwest.** By David J. Price, Engineer in Charge of Grain Dust Explosion Investigations, Bureau of Chemistry, and E. B. McCormick, Chief, Division of Rural Engineering, Office of Public Roads and Rural Engineering. Pp. 22, pls. 11. Contribution from the Bureau of Chemistry and Office of Public Roads and Rural Engineering. Aug. 4, 1916. (**Department Bulletin 379.**) Price, 10 cents.

Gives the nature and causes, and the methods of prevention of dust explosions in separators.

**New Sorghum Varieties for the Central and Southern Great Plains.** By H. N. Vinall, Agronomist, and R. W. Edwards, Scientific Assistant, Office of Forage-Crop Investigations. Pp. 16, figs. 7. Contribution from the Bureau of Plant Industry. Aug. 15, 1916. (**Department Bulletin 383.**) Price, 5 cents.

Gives description and value for forage of Dwarf Hegari, Improved Feterita, Dwarf Feterita, White Milo, and Schrock Kafir.

**Lessons on Tomatoes for Rural Schools.** By E. A. Miller, Specialist in Agricultural Education. Pp. 18, figs. 5. Contribution from the States Relations Service. (Professional Paper.) Aug. 23, 1916. (**Department Bulletin 392.**) Price, 5 cents.

For the use of teachers in southern rural schools.

**Factors Affecting Interest Rates and Other Charges on Short-Time Farm Loans.** By C. W. Thompson, Specialist in Rural Organization. Pp. 12, pls. 2. Contribution from the Office of Markets and Rural Organization. Aug. 26, 1916. (**Department Bulletin 409.**) Price, 5 cents.

This bulletin discusses the reasons for variations in interest rates on short-time farm loans, giving special attention to those causes of variation which can be modified by individual or collective action.

**Influence of Age on the Value of Dairy Cows and Farm Work Horses.** By J. C. McDowell, Agriculturist, Office of Farm Management. Pp. 12, figs. 5. Contribution from the Office of Farm Management, Office of the Secretary. (Professional Paper.) Aug. 24, 1916. (Department Bulletin 413.) Price, 5 cents.

This bulletin is of interest to stock-raisers generally.

#### MISCELLANEOUS.

**Important Insects Which May Affect the Health of Men or Animals Engaged in Military Operations.** Pp. 24, figs. 15. Prepared by the Bureau of Entomology. Aug. 12, 1916. (Circular No. 61, Office of the Secretary.) Price, 5 cents.

**Rules and Regulations of the Secretary of Agriculture under the United States Cotton Futures Act of August 11, 1916.** (Circular No. 64, Office of the Secretary.) Price, 5 cents.

**Index to Agricultural Outlook.** By Charles H. Greathouse, in Charge of Indexing, Division of Publications. Pp. 71. [1915.]

The Agricultural Outlook superseded the Crop Reporter, and was itself superseded by the Monthly Crop Report. It covered the time between October, 1913, and April, 1915, and was issued as Farmers' Bulletins Nos. 558, 560, 563, 570, 575, 581, 584, 590, 598, 604, 611, 615, 620, 629, 641, 645, 651, 665, and 672. This index will be useful to those who have kept a file of said bulletins.

#### SERIALS.

**Journal of Agricultural Research.** (Issued weekly. For sale only.)

Vol. 6, No. 18. July 31, 1916. Contents: Life Cycles of the Bacteria. By F. Löhnis and N. R. Smith.—A Respiration Calorimeter, Partly Automatic, for the Study of Metabolic Activity of Small Magnitude. By C. F. Langworthy and R. D. Milner. Pp. 675-720, pls. A-G, XCII-XCV, fig. 1. Price, 25 cents.

Same, No. 19. August 7, 1916. Contents: Mottle-Leaf of Citrus Trees in Relation to Soil Conditions. By Lyman J. Briggs, C. A. Jensen, and J. W. McLane.—Vegetative Succession Under Irrigation. By J. Francis Macbride. Pp. 721-759, pls. XCVI-CV, figs. 4. Price, 25 cents.

Same, No. 20. August 14, 1916. Contents: Agricultural Value of Impermeable Seeds. By George T. Harrington.—Mendelism of Short Ears in Sheep. By E. G. Ritzman. Pp. 761-798, pl. 1, figs. 6. Price, 10 cents.

Same, No. 21. August 21, 1916. Contents: Life-History Studies of *Cirphis unipuncta*, the True Army Worm. By John J. Davis and A. F. Satterthwait.—Infection of Timothy by *Puccinia graminis*. By E. C. Stakman and F. J. Piemeisel.—Control of the Powdery Dryrot of Potatoes Caused by *Fusarium trichothecoides*. By O. A. Pratt. Pp. 799-832, pls. CVII-CVIII, figs. 2. Price, 15 cents.

Same, No. 22. August 28, 1916. Contents: Use of the Moisture Equivalent for the Indirect Determination of the Hygroscopic Coefficient. By Frederick J. Alway and Jouette C. Russel.—*Thersilochus conotrachelii*, a Parasite of the Plum Curculio. By R. A. Cushman.—Effect on Plant Growth of Sodium Salts in the Soil. By Frank B. Headley, E. W. Curtis, and C. S. Scofield. Pp. 833-869, pl. CIX, figs. 17. Price, 10 cents.

NOTE.—Beginning with Volume 5, The Journal of Agricultural Research will be issued weekly and distributed free *only* to the libraries of agricultural colleges and experiment stations, to large universities, technical schools, and such institutions as make suitable exchanges with the department. *It will not be sent free to individuals.* The Superintendent of Documents will receive subscriptions for this publication, the price being \$3 per year, 52 numbers.

**Experiment Station Record.** Vol. XXXV, No. 1. July, 1916. E. W. Allen, Ph. D., Editor. Pp. 1-100. Price, 15 cents.

NOTE.—The Record is a technical review of the world's scientific literature pertaining to agriculture. It is not intended for general distribution, and its free distribution is restricted to persons connected with the agricultural colleges, experiment stations, and similar institutions, and to libraries and exchanges. It can not be sent free to individuals having no official connection with public institutions. The Superintendent of Documents will receive subscriptions for this publication, which is issued in two volumes a year, ten numbers each, at \$1 a volume.

Same, Vol. XXXV, No. 2. August, 1916. Pp. 101-200. Price, 15 cents.

**The Monthly Crop Report.** Vol. 2, No. 8, August, 1916. Pp. 73-84. (Bureau of Crop Estimates.)

Contains data relating to agriculture, including estimates of acreage, conditions, yield, prices, and value of crops and live stock. For free distribution.

## SERVICE AND REGULATORY ANNOUNCEMENTS—FOR SALE ONLY.

These contain *only* information, instructions, and notices governing the enforcement of food and drugs act, meat inspection, 28-hour, and quarantine laws, and the various regulations of the department. Issued monthly by certain bureaus. *Free distribution* is limited to persons in the employ of the department, to public officials whose duties render it necessary for them to have such information, to journals especially concerned, and to manufacturers and firms whose business is affected by same. Others desiring copies are respectfully referred to the Superintendent of Documents, Government Printing Office, who has them for sale *only*, at prices noted.

Bureau of Animal Industry. No. 110. June, 1916. Pp. 49-60. July 28, 1916.

Price, 5 cents.

Bureau of Animal Industry. No. 111. July, 1916. Pp. 61-65. Aug. 19, 1916.

Price, 5 cents.

Bureau of Biological Survey. No. 10. Regulations for the Protection of Deer, Moose, Caribou, Sheep, and Mountain Goats in Alaska. Pp. 2. Aug. 10, 1916. Price, 5 cents.

Bureau of Biological Survey. No. 11. Regulations for the Protection of Migratory Birds. Pp. 6. Aug. 21, 1916. Price, 5 cents.

Bureau of Chemistry. Supplement No. 17. [Notices of Judgment Nos. 4301-4350.] Pp. 427-504. Aug. 8, 1916. Price, 10 cents.

Federal Horticultural Board. No. 29. June, 1916. Pp. 73-83. Aug. 5, 1916. Price, 5 cents.

Federal Horticultural Board. No. 30. July, 1916. Pp. 85-92. Aug. 18, 1916. Price, 5 cents.

## SOIL SURVEYS.

All requests for soil surveys are referred to the Bureau of Soils for attention, the distribution of same being controlled by that bureau.

**Soil Survey of Dunklin County, Missouri.** By A. T. Sweet and B. W. Tillman, of the U. S. Department of Agriculture, and H. H. Krusekopf, C. E. Deardorff, W. I. Watkins, and E. W. Knoble, of the University of Missouri. Pp. 47, pls. 3, fig. 1, map. (From F. O. Soils, 1914.) Price, 15 cents.

**Soil Survey of Wayne County, North Carolina.** By B. B. Derrick, of the U. S. Department of Agriculture, In Charge, and S. O. Perkins and F. N. McDowell, of the North Carolina Department of Agriculture. Pp. 51, fig. 1, map. (From F. O. Soils, 1915.) Price, 15 cents.

## PUBLICATIONS OF THE WEATHER BUREAU.

Publications of the Weather Bureau are obtainable only from the Chief of the Weather Bureau or the Superintendent of Documents, Government Printing Office, at the prices noted herein.

**Monthly Weather Review.** (For sale only.) Vol. 44, No. 5. [July 29, 1916.] Pp. 243-319, charts 9, figs. 14. Price, 25 cents a copy, \$2.50 a year. Payable to the Superintendent of Documents.

Special articles: Solar and sky radiation measurements during May, 1916. By H. H. Kimball.—Free-air data by means of sounding balloons, Fort Omaha, Nebr., July, 1914. By W. R. Blair.—Meteorological symbols. By C. F. Talman.—Coefficient of correlation as a measure of relationship. By Chas N. Moore.—Rainfall in China, 1900-1911. By Co-Ching Chu.—American definition of "sleet." By C. Abbe, jr.—Two abnormal pressure distributions in Italy. By F. Eredia.—Fog as a source of water supply. By W. G. Reed.—Simple wind-velocity indicator. By B. C. Kadel.—Diurnal variation of underground temperature. By S. Sato.—Aleksandr Ivanovich Voeikov, 1842-1916.—The Chinese Weather Bureau. By Co-Ching Chu.

**Weather Forecasting in the United States.** By a Board Composed of Alfred J. Henry, chairman, Edward H. Bowie, Henry J. Cox, and Harry C. Frankenstein. Pp. 370, figs. 199. 1916. (W. B. No. 583.) Price, 85 cents.

Contains a general description of the science of weather forecasting, and explains the methods and processes used. No copies available for free distribution.

**National Weather and Crop Bulletin,** Nos. 20, 21, 22, 23, 24, August, 1916, reporting temperature, rainfall, and crop conditions throughout the United States. (Issued weekly, on Wednesday, April to October; monthly remainder of year.) Price, 25 cents a year.

Jos. A. ARNOLD,  
*Editor and Chief Division of Publications.*

WASHINGTON : GOVERNMENT PRINTING OFFICE : 1916

This circular will be sent regularly to all who apply for it.

## United States Department of Agriculture,

WASHINGTON, D. C., September 30, 1916.

### MONTHLY LIST OF PUBLICATIONS.

[SEPTEMBER, 1916.]

A copy of any of the publications listed herein, including those with price named, except the *Journal of Agricultural Research*, *Experiment Station Record*, *Service and Regulatory Announcements*, and publications of the Weather Bureau, may be obtained free upon application to the Editor and Chief of the Division of Publications, United States Department of Agriculture, Washington, D. C., as long as the department's supply lasts.

After this department's supply of the publications listed below is exhausted, those publications of which the price is indicated can still be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C., but by purchase only, and at the prices noted herein.

Send all remittances to the Superintendent of Documents direct. His office is not a part of the Department of Agriculture.

#### FARMERS' BULLETINS—FOR FREE DISTRIBUTION.

No price is quoted for Farmers' Bulletins for the reason that the department's supply of the current numbers is ordinarily sufficient to make it possible to send them free to all applicants.

**The Preservative Treatment of Farm Timbers.** By George M. Hunt, Chemist in Forest Products, Forest Products Laboratory. Pp. 32, figs. 17. Contribution from the Forest Service. Sept. 21, 1916. (**Farmers' Bulletin 744.**)

This bulletin is of value to all who are interested in prolonging the life of building timbers, poles, and posts, especially on farms at a distance from preservative works.

**Roses for the Home.** By F. L. Mulford, Landscape Gardener, Office of Horticultural and Pomological Investigations. Pp. 36, figs. 27. Contribution from the Bureau of Plant Industry. Sept. 26, 1916. (**Farmers' Bulletin 750.**)

This bulletin is of general interest to those who wish to grow roses for pleasure and for the beautification of their home grounds.

**Muscadine Grape Sirup.** By Charles Dearing, Scientific Assistant, Office of Horticultural and Pomological Investigations. Pp. 11, figs. 6. Contribution from the Bureau of Plant Industry. Sept. 6, 1916. (**Farmers' Bulletin 758.**)

Gives directions for preparing the grapes and making the sirup in the home.

#### DEPARTMENTAL BULLETINS—TECHNICAL.

The publications listed below are technical or scientific treatises or bulletins applying to a special industry or locality. The edition is limited, but they will be furnished free to persons who can use such specialized information as long as the supply lasts. However, to insure prompt receipt, remit price to the Superintendent of Documents.

**Larkspur Poisoning of Live Stock.** By C. Dwight Marsh and A. B. Clawson, Physiologists, Poisonous Plant Investigations, Bureau of Plant Industry, and Hadleigh Marsh, Veterinary Inspector, Bureau of Animal Industry. Pp. 91, pls. 15, figs. 12. Contribution from the Bureau of Plant Industry and the Bureau of Animal Industry. (Professional Paper.) Sept. 8, 1916. (**Department Bulletin 365.**) Price, 25 cents.

Describes the different species of larkspurs, symptoms of larkspur poisoning, and suggests treatment for and methods of prevention.

**Business Practice and Accounts for Cooperative Stores.** By J. A. Bexell, Dean, School of Commerce, Oregon Agricultural College, Collaborator, Office of Markets and Rural Organization, and W. H. Kerr, Investigator in Market Business Practice, Office of Markets and Rural Organization. Pp. 56. Contributions from the Office of Markets and Rural Organization. Sept. 29, 1916. (**Department Bulletin 381.**) Price, 10 cents.

This bulletin should be of interest to all cooperative stores and members of such stores. It should be of interest to retail grocery and general merchandise stores throughout the country.

**Public Road Mileage and Revenues in the Middle Atlantic States, 1914.** Prepared jointly by the Division of Road Economics and the State Collaborators of the Office of Public Roads and Rural Engineering. Pp. 28. Contribution from the Office of Public Roads and Rural Engineering. Sept. 11, 1916. (**Department Bulletin 386.**) Price, 5 cents.

Covers the States of New York, New Jersey, and Pennsylvania, and is of interest to all users of public roads and those who are concerned with road maintenance.

**The Grazing Industry of the Bluegrass Region.** By Lyman Carrier, Agronomist, Forage-Crop Investigations. Pp. 18, figs. 16. Contribution from the Bureau of Plant Industry. Sept. 20, 1916. (**Department Bulletin 397.**) Price, 5 cents.

Describes the various systems of fattening and finishing live stock in the bluegrass regions of Virginia, West Virginia, Tennessee, and Kentucky.

**A System of Accounts for Live-Stock Shipping Associations.** By John R. Humphrey and W. H. Kerr, Investigators in Market Business Practice. Pp. 15. Contribution from the Office of Markets and Rural Organization. Sept. 24, 1916. (**Department Bulletin 403.**) Price, 5 cents.

Is of interest to live-stock shipping associations and persons contemplating the organization of such associations.

**Distinguishing Characters of the Seeds of Sudan Grass and Johnson Grass.** By F. H. Hillman, Assistant Botanist, Seed Laboratory. Pp. 5, figs. 4. Contribution from the Bureau of Plant Industry. (Professional Paper.) Sept. 5, 1916. (**Department Bulletin 406.**) Price, 5 cents.

Of especial interest to seedsmen.

**Systems of Renting Truck Farms in Southwestern New Jersey.** By Howard A. Turner, Scientific Assistant. Pp. 20. Contribution from the Office of Farm Management, Office of the Secretary. (Professional Paper.) Sept. 14, 1916. (**Department Bulletin 411.**) Price, 5 cents.

A record of investigations covering 246 farms and is of interest to renters and landlords in general.

**The Normal Day's Work of Farm Implements, Workmen, and Crews in Western New York.** By H. H. Mowry, Agriculturist. Pp. 16. Contribution from the Office of Farm Management, Office of the Secretary. (Professional Paper.) Sept. 22, 1916. (**Department Bulletin 412.**) Price, 5 cents.

Of especial interest to those employing help on the farm.

**The New Mexico Range Caterpillar and Its Control.** By V. L. Wildermuth, Entomological Assistant, and D. J. Caffrey, Scientific Assistant, Cereal and Forage Insect Investigations. Pp. 12, figs. 12. Contribution from the Bureau of Entomology. Sept. 21, 1916. (**Department Bulletin 443.**) Price, 5 cents.

The purpose of this bulletin is to place before the stockmen and farmers of the Southwest the results of investigations carried on during the past three years concerning the control of the New Mexico range caterpillar.

#### MISCELLANEOUS.

**Rules and Regulations of the Secretary of Agriculture for Carrying out the Federal Aid Road Act.** Pp. 23. Sept. 1, 1916. (**Circular 65, Office of the Secretary.**) Price, 5 cents.

**The Work of the San Antonio Experiment Farm in 1915.** By S. H. Hastings, Farm Superintendent. Pp. 17, figs. 2. Sept. 13, 1916. (Bureau of Plant Industry.) Price, 5 cents.

**Illustrated Lecture on How to Make Good Butter.** By J. H. McClain, Dairy Husbandman in Charge Southern Dairying, Dairy Division, Bureau of Animal Industry. Pp. 9. Contribution from the States Relations Service and Bureau of Animal Industry. Sept. 6, 1916. (**Syllabus 19, States Relations Service.**) Price, 5 cents.

For the use of Farmers' Institute and extension lectures in Southern States only.

**Illustrated Lecture on Corn Production.** By C. P. Hartley, Physiologist in Charge of Corn Investigations, Bureau of Plant Industry, and H. B. Hendrick, Assistant in Agricultural Education, States Relations Service. Pp. 24. Contribution from the States Relations Service and Bureau of Plant Industry. Sept. 1, 1916. (**Syllabus 21, States Relations Service.**) Price, 5 cents.

Is designed to aid Farmers' Institute and other extension lecturers in presenting this subject.

**Illustrated Lecture on Orchard Management.** By H. M. Conolly, Assistant in Agricultural Education, and E. J. Glasson, Specialist in Horticulture and Forestry, States Relations Service. Pp. 15. Contribution from the States Relations Service in cooperation with the Bureau of Plant Industry. Sept. 1916. (**Syllabus 23, States Relations Service.**) Price, 5 cents.

Is designed to aid Farmers' Institute and other extension lecturers in presenting this subject.

**Contents and Index to Bulletin 94, Bureau of Entomology.** Insects Injurious to Forests and Forest Products. Pp. ix, 87-95. Sept. 9, 1916. Price, 5 cents.

**Contents and Index to Bulletin 96, Bureau of Entomology.** Papers on Insects Affecting Stored Products. Pp. v, 95-106. Sept. 11, 1916.

**Contents and Index to Bulletin 99, Bureau of Entomology.** Papers on Insects Injurious to Citrus and Other Subtropical Fruits. Pp. iv, 31-34. Sept. 12, 1916. Price, 5 cents.

**Contents and Index to Bulletin 109, Bureau of Entomology.** Papers on Insects Affecting Vegetables. Pp. v, 77-84. Sept. 9, 1916. Price, 5 cents.

## SERIALS.

**Journal of Agricultural Research.** (Issued weekly. For sale only.)

Vol. 6, No. 23. Sept. 4, 1916. Contents: Observations on the Life History of the Army Cutworm, *Chorizagrotis auxiliaris*. By R. A. Cooley. *Aphidoletes meridionalis*, an Important Dipterous Enemy of Aphids. By John J. Davis.—Influence of Barnyard Manure and Water upon the Bacterial Activities of the Soil.—By J. E. Greaves and E. G. Carter. Pp. 871-926, pl. 1, figs. 14. Price, 15 cents.

Same, No. 24, Sept. 11, 1916. Contents: Progressive Oxidation of Cold-Storage Butter. By D. C. Dyer.—Bacteriological Studies of a Soil Subjected to Different Systems of Cropping for Twenty-Five Years. By P. L. Gainey and W. M. Gibbs. Pp. 927-975, pl. 1, figs. 2. Price, 15 cents.

Same, No. 25. Sept. 18, 1916. Contents: Studies on the Physiology of Reproduction in the Domestic Fowl.—XV. Dwarf Eggs. By Raymond Pearl and Maynie R. Curtis.—Crotonic Acid, A Soil Constituent. By E. H. Walters and Louise E. Wise. Pp. 977-1046, pls. CXIII-CXIV, figs. 4. Price, 20 cents.

NOTE.—Beginning with Volume 5, The Journal of Agricultural Research will be issued weekly and distributed free *only* to the libraries of agricultural colleges and experiment stations, to large universities, technical schools, and such institutions as make suitable exchanges with the department. *It will not be sent free to individuals.* The Superintendent of Documents will receive subscriptions for this publication, the price being \$3 per year, 52 numbers.

**Experiment Station Record.** Vol. XXXIV, Index Number. Sept. 5, 1916. E. W. Allen, Ph. D., Editor. Pp. 901-1000. Price, 15 cents.

Same, Vol. XXXV, No. 3. Abstract Number. Pp. 201-300. Price, 15 cents.

NOTE.—The Record is a technical review of the world's scientific literature pertaining to agriculture. It is not intended for general distribution, and its free distribution is restricted to persons connected with the agricultural colleges, experiment stations, and similar institutions, and to libraries and exchanges. It can not be sent free to individuals having no official connection with public institutions. The Superintendent of Documents will receive subscriptions for this publication, which is issued in two volumes a year, ten numbers each, at \$1 a volume.

**The Monthly Crop Report.** Vol. 2, No. 9, September, 1916. Pp. 85-96. (Bureau of Crop Estimates.)

Contains data relating to agriculture, including estimates of acreage, conditions, yield, prices, and value of crops and live stock. For free distribution.

## SERVICE AND REGULATORY ANNOUNCEMENTS—FOR SALE ONLY.

These contain *only* information, instructions, and notices governing the enforcement of food and drugs act, meat inspection, 28-hour, and quarantine laws, and the various regulations of the department. Issued monthly by certain bureaus. Free distribution is limited

to persons in the employ of the department, to public officials whose duties render it necessary for them to have such information, to journals especially concerned, and to manufacturers and firms whose business is affected by same. Others desiring copies are respectfully referred to the Superintendent of Documents, Government Printing Office, who has them for sale *only*, at prices noted.

**Bureau of Animal Industry.** No. 112. August, 1916. Pp. 67-76. Sept. 29, 1916. Price, 5 cents.

**Bureau of Chemistry.** Supplement No. 18. [N. J. 4351-4400.] Pp. 505-618. Sept. 12, 1916. Price, 5 cents.

**Insecticide and Fungicide Board.** No. 13. [State Insecticide and Fungicide Laws.] Pp. 101-152. Sept. 16, 1916. Price, 5 cents.

**Office of Markets and Rural Organization.** No. 10. Changes made in the United States Cotton Futures Act by its Reenactment on Aug. 11, 1916. Pp. 119-134. Sept. 1, 1916. Price, 5 cents.

**Office of Markets and Rural Organization.** No. 11. Official Grain Standards of the United States for Shelled Corn. Pp. 11. Sept. 2, 1916. Price, 5 cents.

### SOIL SURVEYS.

All requests for soil surveys are referred to the Bureau of Soils for attention, the distribution of same being controlled by that bureau.

**Soil Survey of Jefferson County, Arkansas.** By B. W. Tillman, In Charge, R. R. Burn, W. B. Cobb, and Clarence Lounsbury, of the U. S. Department of Agriculture, and G. G. Strickland, of the Arkansas Agricultural Experiment Station. Pp. 39, fig. 1, map. (From F. O. Soils, 1915.) Price, 15 cents.

**Soil Survey of Franklin County, Florida.** By Charles N. Mooney and A. L. Patrick. Pp. 31, fig. 1, map. (From F. O. Soils, 1915.) Price, 15 cents.

**Soil Survey of Laurens County, Georgia.** By A. T. Sweet, In Charge, Grove B. Jones, E. T. Maxon, T. M. Morrison, and E. C. Hall. Pp. 41, fig. 1, map. (From F. O. Soils, 1915.) Price, 15 cents.

**Soil Survey of De Kalb County, Missouri.** By H. H. Krusekopf, In Charge, R. C. Doneghue, and M. M. McCool, of the University of Missouri. Pp. 25, fig. 1, map. (From F. O. Soils, 1914.) Price, 15 cents.

**Reconnaissance Soil Survey of North Part of North-Central Wisconsin.** By W. J. Geib, In Charge, Arthur E. Taylor, L. R. Schoenmann, and Carl C. Thompson, of the U. S. Department of Agriculture, and T. J. Dunnewald, W. C. Boardman, Clinton B. Post, and A. R. Albert, of the Wisconsin Geological and Natural History Survey. Pp. 76, pls. 6, figs. 2, map. (From F. O. Soils, 1914.) Price, 15 cents.

### PUBLICATIONS OF THE WEATHER BUREAU.

Publications of the Weather Bureau are obtainable only from the Chief of the Weather Bureau or the Superintendent of Documents, Government Printing Office, at the prices noted herein.

**Monthly Weather Review.** (For sale only.) Vol. 44, No. 6. June, 1916. [Aug. 28, 1916.] Pp. 321-379, charts 9, figs. 29. Price, 25 cents a copy, \$2.50 a year. Payable to the Superintendent of Documents.

Special Articles: Solar and Sky radiation measurements during June, 1916. By H. H. Kimball.—Meteor of June 28 over northeast Texas. By H. H. Martin.—Observations of meteor trains.—Meteor of May 7 in eastern Mississippi. By J. H. Jaqua.—Meteor of May 7, at Demopolis, Ala. By J. G. Whittfield.—Work of the American Meteor Society, 1914 and 1915. By C. P. Oliver.—Use of a flagpole in calibrating kite anemometers. By B. J. Sherry.—Tropical rains: Their duration, frequency, and intensity. By O. L. Fassig.—Mechanism of cyclones. By F. J. W. Whipple.—Meteorological aspects of oceanography. By Hans Pettersson.—Fog in relation to wind direction on Mount Tamalpais, Cal. By Herbert H. Wright.—On the so-called change in European climate during historic times. By H. H. Hildebrandsson.—Violent easterly winds at Tatoosh Islands, Wash. By Ralph C. Mize.

**National Weather and Crop Bulletin,** Nos. 25, 26, 27, 28. September, 1916, reporting temperature, rainfall, and crop conditions throughout the United States. (Issued weekly, on Wednesday, April to October; monthly remainder of year.) Price, 25 cents a year.

Jos. A. ARNOLD,  
*Editor and Chief Division of Publications.*

WASHINGTON : GOVERNMENT PRINTING OFFICE : 1916

This circular will be sent regularly to all who apply for it.

# United States Department of Agriculture,

WASHINGTON, D. C., October 31, 1916.

## MONTHLY LIST OF PUBLICATIONS.

[OCTOBER, 1916.]

### READ CAREFULLY BEFORE ORDERING.

A copy of any of the publications listed herein, except those otherwise noted, may be obtained free upon application to the Editor and Chief of the Division of Publications, United States Department of Agriculture, Washington, D. C., as long as the department's supply lasts.

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### SPECIAL NOTICE.

Before mailing your request be sure and see that your name and complete post office address (street number or rural route number as the case may be) is attached.

### FARMERS' BULLETINS—FOR FREE DISTRIBUTION.

**NOTE.**—The department's supply of the current numbers of Farmers' Bulletins is ordinarily sufficient to make it possible to send them free to all applicants. They are also for sale at 5 cents per copy.

**The Bedbug.** By C. L. Marlatt, Entomologist and Assistant Chief of the Bureau. Pp. 12, figs. 4. Contribution from the Bureau of Entomology. Oct. 14, 1916. (**Farmers' Bulletin 754.**)

For general distribution.

**Common Birds of Southeastern United States in Relation to Agriculture.** By F. E. L. Beal, W. L. McAtee, and E. R. Kalmbach, Assistant Biologists. Pp. 40, figs. 20. Contribution from the Bureau of Biological Survey. Oct. 26, 1916. (**Farmers' Bulletin 755.**)

The food habits and relation to agriculture of 23 species of birds common in the Southeastern States are described; of general interest, but especially applicable to the section covered.

**Culture of Rye in the Eastern Half of the United States.** By Clyde E. Leighty, Agronomist in Charge of Eastern Wheat and Rye Investigations. Pp. 16, figs. 8. Contributions from the Bureau of Plant Industry. Oct. 11, 1916. (**Farmers' Bulletin 756.**)

Suitable for distribution in territory above described.

**Commercial Varieties of Alfalfa.** By R. A. Oakley, Agronomist, and H. L. Westover, Scientific Assistant, Office of Forage-Crop Investigations. Pp. 24, figs. 7. Contribution from the Bureau of Plant Industry. Oct. 12, 1916. (**Farmers' Bulletin 757.**)

Intended for general distribution and will be of interest to farmers in all parts of the United States where alfalfa can be grown.

**"White Ants" As Pests in the United States and Methods of Preventing Their Damage.** By T. E. Snyder, Specialist in Forest Entomology, Forest Insect Investigations. Pp. 20, figs. 14. Contribution from the Bureau of Entomology. Oct. 9, 1916. (**Farmers' Bulletin 759.**)

Suitable for general distribution.

**How to Attract Birds in Northwestern United States.** By W. L. McAtee, Assistant Biologist. Pp. 12, figs. 11. Contribution from the Bureau of Biological Survey. Oct. 16, 1916. (**Farmers' Bulletin 760.**)

Suggests means of providing a food supply for wild birds about homesteads in Oregon, Washington, Montana, Idaho, and northern parts of California, Nevada, and Utah.

**Management of Muck-Land Farms in Northern Indiana and Southern Michigan.** By H. R. Smalley, Assistant Agriculturist. Pp. 26, figs. 12. Contribution from the Office of Farm Management, Office of the Secretary. Oct. 10, 1916. (**Farmers' Bulletin 761.**)

Should be of interest to muck-land farmers of northern Indiana and southern Michigan and also to farmers in other sections of the country where soil and climatic conditions are similar or comparable.

**The False Chinch Bug and Measures for Controlling It.** By F. B. Milliken, Scientific Assistant, Truck Crop and Stored Product Insect Investigations. Pp. 4, figs. 2. Contribution from the Bureau of Entomology. Oct. 21, 1916. (**Farmers' Bulletin 762.**)

For general distribution.

**Cotton Ginning Information for Farmers.** By Fred Taylor, Cotton Technologist; D. C. Griffith, Investigator in Cotton Marketing; and C. E. Atkinson, Assistant in Cotton Marketing. Pp. 24, figs. 25. Contribution from the Office of Markets and Rural Organization. Oct. 31, 1916. (**Farmers' Bulletin 764.**)

Should be of interest to cotton merchants, factors, ginnerys, and others of the trade.

**Game Laws for 1916.** A Summary of the Provisions Relating to Seasons, Export, Sale, Limits, and Licenses. By T. S. Palmer, W. F. Bancroft, and Frank L. Earnshaw, Assistants, Biological Survey. Pp. 64. Contribution from the Bureau of Biological Survey. Oct. 9, 1916. (**Farmers' Bulletin 774.**)

Contains the proclamation of the President and the amended Regulations for the Protection of Migratory Birds, approved Aug. 21, 1916, and the treaty with Great Britain for the protection of migratory birds in the United States and Canada, ratified Aug. 29, 1916.

**Laws Relating to Fur-Bearing Animals, 1916.** A Summary of Laws in the United States and Canada Relating to Trapping, Protection, Propagation, and Bounties. By D. E. Lantz, Assistant Biologist. Pp. 28. Contribution from the Bureau of Biological Survey. Oct. 19, 1916. (**Farmers' Bulletin 783.**)

Is intended for general distribution among persons interested in fur farming, trapping, and the fur trade.

#### DEPARTMENT BULLETINS.—TECHNICAL.

The publications listed below are technical or scientific treatises or bulletins applying to a special industry or locality. The edition is limited, but they will be furnished free to persons who can use such specialized information as long as the supply lasts. However, to insure prompt receipt, remit price to the Superintendent of Documents.

**Forests of Porto Rico, Past, Present, and Future, and Their Physical and Economic Environment.** By Louis S. Murphy, Forest Examiner, in cooperation with the Government of Porto Rico Board of Commissioners of Agriculture. Pp. 99, pls. 12, figs. 3, map. Contribution from the Forest Service. Oct. 20, 1916. (**Department Bulletin 354.**) Price, 25 cents.

No copies available for free distribution.

**The Intrinsic Values of Grain, Cottonseed, Flour, and Similar Products, Based on the Dry-Matter Content.** By E. G. Boerner, Assistant in Grain Standardization. Pp. 32, figs. 3. Contribution from the Bureau of Plant Industry. (Professional Paper.) Oct. 17, 1916. (**Department Bulletin 374.**) Price, 5 cents.

Shows the percentage of water contained in various grains, flours, and cottonseed, and explains the benefits derived by drying said products before marketing same.

**Economic Surveys of County Highway Improvement.** By J. E. Pennybacker, Chief of Road Economics, and M. O. Eldridge, Assistant in Road Economics. Pp. 86, pls. 36. Contributions from the Office of Public Roads and Rural Engineering. Oct. 23, 1916. (**Department Bulletin 393.**) Price, 35 cents.

A compilation and analysis of data in eight selected counties, showing comparative financial burdens and economic benefits resulting from highway improvement during a period of years.

**Second Annual Report of Bird Counts in the United States, With Discussion of Results.** By Wells W. Cooke, Assistant Biologist. Pp. 20, fig. 1. Contribution from the Bureau of Biological Survey. Oct. 23, 1916. (**Department Bulletin 396.**) Price, 5 cents.

This second report on the number and relative abundance of wild birds is for the information of workers and others interested in the protection and increase of birds.

**Cereal Experiments at the Judith Basin Substation, Moccasin, Montana.** By N. C. Donaldson, Scientific Assistant, Office of Cereal Investigations. Pp. 42, figs. 17. Contribution from the Bureau of Plant Industry. Oct. 12, 1916. (**Department Bulletin 398.**) Price, 10 cents.

Of interest to farmers and settlers in this part of Montana.

**Experiments With Marquis Wheat.** By Carleton R. Ball, Agronomist in Charge, and J. Allen Clark, Scientific Assistant, Western Wheat Investigations, Office of Cereal Investigations. Pp. 40, figs. 10. Contribution from the Bureau of Plant Industry. (Professional Paper.) Oct. 26, 1916. (**Department Bulletin 400.**) Price, 10 cents.

Is intended for agronomists, both experimenters and extension workers, and for technical workers in other lines who are concerned with wheat and its products.

**Marketing and Distribution of Western Muskmelons in 1915.** By O. W. Schleussner, Assistant in Market Surveys, and C. W. Kitchen, Market Station Assistant. Pp. 38, charts 4. Contributions from the Office of Markets and Rural Organization. Oct. 31, 1916. (**Department Bulletin 401.**) Price, 15 cents.

Is of interest to muskmelon growers in the West, shippers, dealers, transportation companies, and consumers, and to all engaged in the trade.

**Cereal Experiments at the Akron Field Station, Akron, Colorado.** By George A. McMurdo, Assistant, Office of Cereal Investigations. Pp. 35, figs. 11. Contribution from the Bureau of Plant Industry. Oct. 3, 1916. (**Department Bulletin 402.**) Price, 10 cents.

Of interest to settlers in northeastern Colorado, and southeastern Wyoming, southwestern Nebraska, and northwestern Kansas.

**Hemp Hurs as Paper-Making Material.** By Lyster H. Dewey, Botanist in Charge of Fiber-Plant Investigations, and Jason L. Merrill, Paper-Plant Chemist, Paper-Plant Investigations. Pp. 26, figs. 4. Contribution from the Bureau of Plant Industry. (Professional Paper.) Oct. 14, 1916. (**Department Bulletin 404.**) Price, 5 cents.

Should be useful to all persons who are interested in the economic phases of paper making, especially to print and book paper manufacturers. It also should be of interest to scientific investigators and chemists.

**Experiments During 1915 in the Destruction of Fly Larvae in Horse Manure.** By F. C. Cook, Physiological Chemist, Bureau of Chemistry, and R. H. Hutchison, Scientific Assistant, Bureau of Entomology. Pp. 19. Contribution from the Bureau of Entomology and Bureau of Chemistry. Oct. 28, 1916. (**Department Bulletin 408.**) Price, 5 cents.

Suitable for general distribution.

**The Recovery of Potash from Alunite.** By W. H. Waggaman, Scientist in Fertilizer Investigations, and J. A. Cullen, Analyst. Pp. 14, fig. 1. Contribution from the Bureau of Soils. (Professional Paper.) Oct. 10, 1916. (**Department Bulletin 415.**) Price, 5 cents.

Describes location and extent of the Utah deposits of Alunite, and the method of extracting the potash.

**Cooling Hot-Bottled Pasteurized Milk by Forced Air.** By S. Henry Ayers, John T. Bowen, and W. T. Johnson, Jr., Dairy Division. Pp. 38, figs. 20. Contribution from the Bureau of Animal Industry. (Professional Paper.) Oct. 27, 1916. (**Department Bulletin 420.**) Price, 10 cents.

Of interest to milk dealers and distributors generally.

**The Sugar-Beet Thrips.** By William H. White, Scientific Assistant, Truck Crop and Stored-Product Insect Investigations. Pp. 12, pls. 2, figs. 8. Contribution from the Bureau of Entomology. (Professional Paper.) Oct. 26, 1916. (**Department Bulletin 421.**) Price, 5 cents.

Gives history and life habits of this insect and suggests methods of control.

**The Eggplant Tortoise Beetle.** By Thomas H. Jones, Entomological Assistant, Truck-Crop and Stored-Product Insect Investigations. Pp. 8, figs. 3. Contribution from the Bureau of Entomology. (Professional Paper.) Oct. 2, 1916. (**Department Bulletin 422.**) Price 5 cents.

Describes life history and habits of this insect and suggests methods of control.

**Farming on the Cut-Over Lands of Michigan, Wisconsin, and Minnesota.** By J. C. McDowell, Agriculturist, and W. B. Walker, Assistant Agriculturist. Pp. 24, figs. 10. Contribution from the Office of Farm Management, Office of the Secretary. Oct. 24, 1916. (**Department Bulletin 425.**) Price, 5 cents.

This bulletin is issued to meet the demand for a publication dealing in a popular manner with the essential problems of this region.

**Cereal Experiments on the Cheyenne Experiment Farm, Archer, Wyoming.** By Jenkin W. Jones, Scientific Assistant, Office of Cereal Investigations. Pp. 40, figs. 10. Contribution from the Bureau of Plant Industry. Oct. 28, 1916. (**Department Bulletin 430.**) Price, 10 cents.

Of interest to those engaged in dry farming in the higher parts of the northern Plains area.

**The Action of Manganese Under Acid and Neutral Soil Conditions.** By J. J. Skinner and F. R. Reid, Biochemists, Office of Soil-Fertility Investigations. Pp. 12, figs. 3. Contribution from the Bureau of Plant Industry. (Professional Paper.) Oct. 27, 1916. (**Department Bulletin 441.**) Price, 5 cents.

The results given in this bulletin throw further light on the effect of this catalytic fertilizer under various soil conditions. That its effect is dependent on the reaction of the soil is demonstrated. The bulletin is of interest to scientific investigators, to manufacturers of catalytic fertilizers, and to those growers whose technical training induces them to experiment with new substances to increase or control crop production.

**A Study of the Electrolytic Method of Silver Cleaning.** By H. L. Lang and C. F. Walton, Jr., Scientific Assistants, Office of Home Economics. Pp. 12. Contribution from the States Relations Service. (Professional Paper.) Oct. 31, 1916. (**Department Bulletin 449.**) Price, 5 cents.

Contains information regarding the advantages and limitations of the electrolytic method of cleaning silver and the conditions under which it is most efficient, which it is believed will prove useful to teachers and housekeepers generally.

**Improved Apparatus for Determining the Test Weight of Grain, With a Standard Method of Making the Test.** By E. G. Boerner, Assistant in Grain Standardization. Pp. 15, figs. 8. Contribution from the Bureau of Plant Industry. (Professional Paper.) Oct. 30, 1916. (**Department Bulletin 472.**) Price, 5 cents.

Of interest to grain dealers and grain inspectors.

#### MISCELLANEOUS.

**Meat Situation in the United States.** Pt. 5. Methods and Cost of Marketing Live Stock and Meats. By Louis D. Hall, Specialist, and F. M. Simpson and S. W. Doty, Assistants, in Marketing Live Stock and Meats, Office of Markets and Rural Organization. Pp. 98, pls. 20. Contribution from the Office of Markets and Rural Organization. Oct. 7, 1916. (**Report 113, Office of the Secretary.**) Price, 25 cents.

**NOTE.**—One of the five reports issued showing the results of various independent inquiries dealing with several phases of the meat industry, undertaken by specialists of the department, at the suggestion of a committee appointed in 1914 by the Secretary to consider the economics of the meat situation; the other four reports were published as Reports Nos. 109, 110, 111, and 112, Office of the Secretary. They are not available for free distribution, but are for sale by the Superintendent of Documents, the price of the five reports being 95 cents.

**State Highway Mileage and Expenditures for the Calendar Year 1915.**  
 (Prepared by the Division of Road Economics, Office of Public Roads and Rural Engineering.) Pp. 8. Oct. 2, 1916. (**Circular 63, Office of the Secretary.**) Price, 5 cents.

**Suggestions for the Manufacture and Marketing of Creamery Butter in the South.** By Roy C. Potts, Specialist in Marketing Dairy Products, Office of Markets and Rural Organization, and William White, Dairy Manufacturing Specialist, Dairy Division of the Bureau of Animal Industry. Pp. 12. Oct. 23, 1916. (**Circular 66, Office of the Secretary.**) Price, 5 cents.

Contains definite suggestions of interest to those engaged in the creamery business in the South.

#### SERIALS.

**Journal of Agricultural Research.** (**For sale only.**) Vol. 7, No. 1, Oct. 2, 1916. Contents: *Aspergillus niger* Group. (E—5.) By Charles Thom and James N. Currie. Some Effects of the Blackrot Fungus, *Sphaeropsis malorum*, upon the Chemical Composition of the Apple. (Ala.—3.) By Charles W. Culpepper, Arthur C. Foster, and Joseph S. Caldwell. Formation of Hematoporphyrin in Ox Muscle during Autolysis. (A.—25.) By Ralph Hoagland. Pp. 1-45. Price, 10 cents.

**Same,** Vol. 7, No. 2, Oct. 9, 1916. Contents: Comparison of the Nitrifying Powers of Some Humid and Some Arid Soils. (Cal.—6.) By C. B. Lipman, P. S. Burgess, and M. A. Klein. Immobility of Iron in the Plant. (B.—11.) By P. L. Gile and J. O. Carrero. Pp. 47-87. Price, 10 cents.

**Same,** Vol. 7, No. 3, Oct. 16, 1916. Contents: Effects of Nicotine as an Insecticide. (K—43.) By N. E. McIndoo. Acidity and Adsorption in Soils as Measured by the Hydrogen Electrode. (Cal.—5.) By L. T. Sharp and D. R. Hoagland. Pp. 89-145, pls. 1-3. Price, 15 cents.

**Same,** Vol. 7, No. 4, Oct. 23, 1916. Contents: Life History of *Habrocytus medicaginis*, a Recently Described Parasite of the Chalcis Fly in Alfalfa Seed. (K—44.) By Theodore D. Urbahns.—Daily Transpiration During the Normal Growth Period and Its Correlation with the Weather. (G.—95.) By Lyman J. Briggs and H. L. Shantz. Pp. 147-212, pls. 3, figs. 19. Price, 20 cents.

**Same,** Vol. 7, No. 5, Oct. 30, 1916. Contents: Studies of *Spongospora subterranea* and *Phoma Tuberosa* of the Irish Potato. (G—96.) By I. E. Melhus, J. Rosenbaum, and E. S. Schultz.—Growth of Parasitic Fungi in Concentrated Solutions. (G—97.) By Lon A. Hawkins. Pp. 213-260, pls. 9, figs. 1. Price, 20 cents.

**NOTE.**—Beginning with Volume 5, The Journal of Agricultural Research will be issued weekly and distributed free *only* to the libraries of agricultural colleges and experiment stations, to large universities, technical schools, and such institutions as make suitable exchanges with the department. *It will not be sent free to individuals.* The Superintendent of Documents will receive subscriptions for this publication, the price being \$3 per year, 52 numbers.

**Experiment Station Record.** Vol. XXXV, No. 4, Sept. 1916. E. W. Allen, Ph. D., Editor. Pp. 301-400. Price, 15 cents.

**Same,** Vol. XXXV, No. 5, Oct. 1916. Pp. 401-500. Price, 15 cents.

**NOTE.**—The Record is a technical review of the world's scientific literature pertaining to agriculture. It is not intended for general distribution, and its free distribution is restricted to persons connected with the agricultural colleges, experiment stations, and similar institutions, and to libraries and exchanges. It can not be sent free to individuals having no official connection with public institutions. The Superintendent of Documents will receive subscriptions for this publication, which is issued in two volumes a year, ten numbers each, at \$1 a volume.

**The Monthly Crop Report.** Vol. 2, No. 10, Oct., 1916. Pp. 97-108. (Bureau of Crop Estimates.)

Contains data relating to agriculture, including estimates of acreage, conditions, yield, prices, and value of crops and live stock. For free distribution.

#### PUBLICATIONS OF THE WEATHER BUREAU.

**Publications of the Weather Bureau** are obtainable only from the Chief of the Weather Bureau or the Superintendent of Documents, Government Printing Office, at the prices noted herein.

**Monthly Weather Review.** (**For sale only.**) Vol. 44, No. 7, July, 1916. Pp. 381-429, charts 9, figs. 3. Price, 25 cents a copy, \$2.50 a year. Payable to the Superintendent of Documents.

Special Articles: Solar and sky radiation measurements during July, 1916. By H. H. Kimball.—Investigations in the upper air of Australia. By Griffith Taylor.—Classification of the hydrometers. Pt. 1. By G. Hellmann.—Variability of temperatures. By A. Angot.—Weather forecasting in the United States. By A. J. Henry and others.—New South Wales rainfall. By D. J. Mares.—Hurricane of July 5, 1916, at Pensacola, Fla. By W. F. Reed, Jr.—Hurricane of July 5-6, 1916, at Mobile, Ala. By A. Ashenberger.—Tropical hurricane of July 5, 1916, in Louisiana. By I. M. Cline.—South Carolina hurricane of July 13-14, 1916. By J. H. Scott.—Rivers and floods, July, 1916. By A. J. Henry.—Method for forecasting the maximum summer level in Lake Tahoe. By H. F. Alciatore.—Annual rise in the Columbia. By Floyd D. Young.—Great Lakes levels during July, 1916.

**National Weather and Crop Bulletin,** No. 29, Special for September and October 1-10, 1916, reporting temperature, rainfall, and crop conditions throughout the United States. (Issued weekly, on Wednesday, April to October; monthly remainder of year.) Price, 25 cents a year.

Jos. A. ARNOLD,  
*Editor and Chief Division of Publications.*

This circular will be sent regularly to all who apply for it.

## United States Department of Agriculture,

WASHINGTON, D. C., November 29, 1916.

### MONTHLY LIST OF PUBLICATIONS.

[NOVEMBER, 1916.]

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#### READ CAREFULLY BEFORE ORDERING.

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After this department's supply is exhausted, publications can still be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C., but by purchase only, and at the prices noted herein.

Send all remittances to the Superintendent of Documents direct. His office is not a part of the Department of Agriculture.

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#### FARMERS' BULLETINS—FOR FREE DISTRIBUTION.

**Note.**—The department's supply of the current numbers of Farmers' Bulletins is ordinarily sufficient to make it possible to send them free to all applicants. They are also for sale at 5 cents per copy.

**The Fall Army Worm or "Grass Worm" and Its Control.** By W. R. Walton and Philip Luginbill, Entomological Assistants, Cereal and Forage Insect Investigations. Pp. 16, figs. 13. Contribution from the Bureau of Entomology. November, 1916. (**Farmers' Bulletin 752.**)

For general distribution.

**Commercial Handling, Grading, and Marketing of Potatoes.** By C. T. More, Investigator in Market Grades and Standards, and C. R. Dorland, Assistant in Market Grades and Standards. Pp. 40, figs. 19. Contribution from the Office of Markets and Rural Organization. Nov. 1, 1916. (**Farmers' Bulletin 753.**)

Should be of interest to all growers of potatoes and especially to commercial growers and shippers of the United States who are interested in the most desirable methods used in the handling and marketing of the crop.

**Orchard Barkbeetles and Pinhole Borers, and How to Control Them.** By Fred. E. Brooks, Entomological Assistant, Deciduous Fruit Insect Investigations. Pp. 16, figs. 18. Contribution from the Bureau of Entomology. Nov. 29, 1916. (**Farmers' Bulletin 763.**)

Is of interest to fruit growers generally, especially in the territory east of the Rocky Mountains.

**The Common Cabbage Worm.** By F. H. Chittenden, Entomologist in Charge of Truck-Crop and Stored-Product Insect Investigations. Pp. 16, figs. 10. Contribution from the Bureau of Entomology. Nov. 20, 1916. (**Farmers' Bulletin 766.**)

Is intended to assist cabbage growers to control one of their most troublesome pests.

**Dwarf Broom Corns.** By Benton E. Rothgeb, Scientific Assistant in Grain-Sorghum and Broom-Corn Investigations. Pp. 16, figs. 7. Contribution from the Bureau of Plant Industry. Nov. 18, 1916. (**Farmers' Bulletin 768.**)

Of especial interest to farmers in the southern section of the Great Plains area.

**Losses from Selling Cotton in the Seed.** By Charles F. Creswell, Scientific Assistant. Pp. 8. Contribution from the Office of Markets and Rural Organization. Nov. 10, 1916. (**Farmers' Bulletin 775.**)

This bulletin should be of interest to cotton producers, ginners, and buyers generally

## DEPARTMENT BULLETINS.—TECHNICAL.

The publications listed below are technical or scientific treatises or bulletins applying to a special industry or locality. The edition is limited, but they will be furnished free to persons who can use such specialized information as long as the supply lasts. However, to insure prompt receipt, remit price to the Superintendent of Documents.

**The Flow of Water in Wood-Stave Pipe.** By Fred. C. Scobey, Irrigation Engineer, with discussion by Gardner S. Williams, Theron A. Noble, D. C. Henny, E. A. Moritz, E. W. Schoder, L. M. Hoskins. Pp. 96, pls. 14, figs. 7. Contribution from the Office of Public Roads and Rural Engineering. (Professional Paper.) Nov. 25, 1916. (**Department Bulletin 376.**) Price, 25 cents.

This bulletin treats of the subject of flowing water in wood-stave pipes. It is based on field tests made on pipes in commercial operation. New formulas are developed that more accurately fit all known data than any others now used. This publication is offered for use of engineers designing and measuring wood-stave pipes for irrigation, power, municipal, mining, or other purposes and for courts and attorneys at law interested in cases involving the carrying capacities of wood-stave pipes.

**A Survey of Typical Cooperative Stores in the United States.** By J. A. Bexell, Dean, School of Commerce, Oregon Agricultural College; Hector Macpherson, Director, Bureau of Markets, Oregon Agricultural College; and W. H. Kerr, Investigator in Market Business Practice, Office of Markets and Rural Organization, United States Department of Agriculture. Pp. 32, pls. 2. Contribution from the Office of Markets and Rural Organization. Nov. 3, 1916. (**Department Bulletin 394.**) Price, 10 cents.

Should be of interest to cooperative stores and to producers and consumers generally.

**Progress Reports of Experiments in Dust Prevention and Road Preservation, 1915.** Pp. 71. Contribution from the Office of Public Roads and Rural Engineering. (Professional Paper.) Nov. 10, 1916. (**Department Bulletin 407.**) Price, 10 cents.

Reports the results from a number of experiments in dust prevention and road preservation conducted by the Office of Public Roads in 1915. The materials used and methods employed in the experiments, the several kinds of roads and varying conditions of traffic, and analyses of materials and cost data are given.

**Value to Farm Families of Food, Fuel, and Use of House.** By W. C. Funk, Scientific Assistant. Pp. 35, fig. 1. Contribution from the Office of Farm Management, Office of the Secretary. (Professional Paper.) Nov. 11, 1916. (**Department Bulletin 410.**) Price, 10 cents.

Gives data secured from nearly 1,000 families, covering the value of all food, fuel, and shelter and showing what part was bought and what part was furnished by the farm.

**The Grape Leaf-Folder.** By J. F. Strauss, Entomological Assistant, Deciduous Fruit Insect Investigations. Pp. 16, pls. 4, figs. 6. Contribution from the Bureau of Entomology. Nov. 9, 1916. (**Department Bulletin 419.**) Price, 5 cents.

Describes life history and habits and suggests methods of control of this insect.

**Labor Requirements of Dairy Farms as Influenced by Milking Machines.** By Harold N. Humphrey, Scientific Assistant. Pp. 17, figs. 3. Contribution from the Office of Farm Management, Office of the Secretary. (Professional Paper.) Nov. 25, 1916. (**Department Bulletin 423.**) Price, 5 cents.

Is of interest to dairymen generally, and especially to those having herds of over 15 head of cows.

**The Cottonwood Borer.** By F. B. Milliken, Scientific Assistant, Truck-Crop and Stored-Product Insect Investigations. Pp. 7, pl. 1, figs. 3. Contribution from the Bureau of Entomology. (Professional Paper.) Nov. 9, 1916. (**Department Bulletin 424.**) Price, 5 cents.

Describes life history and habits of this insect and suggests methods of its control.

**Judging the Dairy Cow as a Subject of Instruction in Secondary Schools.** By H. P. Barrows, Assistant in Agricultural Education, States Relations Service, and H. P. Davis, Dairy Husbandman, Bureau of Animal Industry. Pp. 20, figs. 15. Contribution from the States Relations Service and Bureau of Animal Industry. Nov. 4, 1916. (**Department Bulletin 434.**) Price, 5 cents.

Is intended for the use of teachers of secondary agriculture.

**The Apple Leaf-Sewer.** By B. R. Leach, Scientific Assistant, Deciduous Fruit Insect Investigations. Pp. 16, pl. 1, figs. 6. Contribution from the Bureau of Entomology. Nov. 25, 1916. (**Department Bulletin 435.**) Price, 5 cents.

This bulletin will be found of value to apple growers in the North and Central Atlantic States, the Middle West, and portions of Canada.

**False Blossom of the Cultivated Cranberry.** By C. L. Shear, Pathologist, Fruit-Disease Investigations. Pp. 7, pls. 4, figs. 2. Contribution from the Bureau of Plant Industry. (Professional Paper.) Nov. 25, 1916. (**Department Bulletin 444.**) Price, 5 cents.

Is of interest to plant pathologists and to cranberry growers, especially in the States of Massachusetts, New Jersey, Wisconsin, and the coastal regions of Oregon and Washington.

**Water Penetration in the Gumbo Soils of the Belle Fourche Reclamation Project.** By O. R. Mathews, Assistant, Dry-Land Agriculture Investigations. Pp. 12, figs. 4. Contribution from the Bureau of Plant Industry. Nov. 22, 1916. (**Department Bulletin 447.**) Price, 5 cents.

Of especial interest to farmers and users of irrigation water on this project.

**Relation Between Primary Market Prices and Qualities of Cotton.** By Fred Taylor, Cotton Technologist. Pp. 15. Contribution from the Office of Markets and Rural Organization. Nov. 24, 1916. (**Department Bulletin 457.**) Price, 5 cents.

The survey here described should be of interest to all who are connected with the cotton industry.

## MISCELLANEOUS.

**Annual Report of the Porto Rico Agricultural Experiment Station, 1915.**  
Pp. 45, pls. 3. Nov. 23, 1916. Price, 30 cents.

**Experiments on the Supposed Deterioration of Varieties of Vegetables in Porto Rico, with Suggestions for Seed Preservation.** By C. F. Kinman, Horticulturist, and T. B. McClelland, Assistant Horticulturist. Pp. 30, figs. 11, Nov. 8, 1916. (**Bulletin 20, Porto Rico Agricultural Experiment Station.**) Price, 10 cents.

**Rules and Regulations of the Secretary of Agriculture under the United States Grain Standards Act of August 11, 1916.** Pp. 54. Nov. 6, 1916. (**Circular 70, Office of the Secretary.**) Price, 5 cents.

## REPORTS.

**Annual Report of the Secretary, 1916.** Pp. 48.

**Annual Report of the Chief of the Division of Accounts and Disbursements, 1916.** Pp. 3.

**Annual Report of the Chief of the Bureau of Animal Industry, 1916.** Pp. 70.

**Annual Report of the Chief of the Bureau of Biological Survey, 1916.** Pp. 16.

**Annual Report of the Chemist, 1916.** Pp. 14.

**Annual Report of the Chief of the Bureau of Crop Estimates, 1916.** Pp. 7.

**Annual Report of the Editor, 1916.** Pp. 20.

**Annual Report of the Entomologist, 1916.** Pp. 24.

**Annual Report of the Chief of the Office of Farm Management, 1916.** Pp. 9.

**Annual Report of the Federal Horticultural Board, 1916.** Pp. 14.

**Annual Report of the Forester, 1916.** Pp. 36.

**Annual Report of the Insecticide and Fungicide Board, 1916.** Pp. 3.

**Annual Report of the Librarian, 1916.** Pp. 12.

**Annual Report of the Chief of the Office of Markets and Rural Organization, 1916.** Pp. 29.

**Annual Report of the Chief of the Bureau of Plant Industry, 1916.** Pp. 18.

**Annual Report of the Director of the Office of Public Roads and Rural Engineering, 1916.** Pp. 16.

**Annual Report of the Chief of the Bureau of Soils, 1916.** Pp. 7.

**Annual Report of the Solicitor, 1916.** Pp. 22.

**Annual Report of the Director of States Relations Service, 1916.** Pp. 31.

**Annual Report of the Chief of the Weather Bureau, 1916.** Pp. 18.

**NOTE.**—The edition of the above noted reports is limited and none are printed for sale. Requests for them will be filled as long as the supply lasts.

## SERIALS.

**Journal of Agricultural Research. (For sale only.)** Vol. 7, No. 6. Nov. 6, 1916. Contents: Freezing-Point Lowering of the Leaf Sap of the Horticultural Types of *Persea americana*. (G—98.) By J. Arthur Harris and Wilson Poponoe.—Grain of the Tobacco Leaf. (G—99.) By Charles S. Ridgway.—Host Plants of *Thielavia basicola*. (Wis.—6.) By James Johnson. Pp. 261–300, pls. 5, figs. 2. Price, 15 cents.

**Same,** Vol. 7, No. 7. Nov. 13, 1916. Contents: Chemical Composition, Digestibility, and Feeding Value of Vegetable-Ivory Meal. (Mass.—2.) By C. L. Beals and J. B. Lindsey.—Rosy Apple Aphis. (K—45.) By A. C. Baker and W. F. Turner. Pp. 301–343, pls. 6. Price, 15 cents.

**Same,** Vol. 7, No. 8. Nov. 20, 1916. Contents: Use of Two Indirect Methods for the Determination of the Hygroscopic Coefficients of Soils. (Nebr.—1.) By F. J. Alway and V. L. Clark.—Correlation Between the Size of Cannon Bone in the Offspring and the Age of the Parents. (Ill.—5.) By Christian Wreidt.—*Laspeyresia molesta*, an Important New Insect Enemy of the Peach. (K—46.) By A. L. Quaintance and W. B. Wood. Pp. 345–377, pls. 6, figs. 6. Price, 15 cents.

**Same,** Vol. 7, No. 9. Nov. 27, 1916. Contents: Energy Values of Red-Clover Hay and Maize Meal. (Pa.—1.) By Henry Prentiss Armsby, J. August Fries, and Winfred Waite Braman.—Relationship between the Wetting Power and Efficiency of Nicotine-Sulphate and Fish-Oil Soap Spray. (Va.—1.) By Loren B. Smith.—Life History and Poisonous Properties of *Claviceps paspali*. (Miss.—1.) By H. B. Brown.—Effect of Sodium Salts in Water Cultures on the Absorption of Plant Food by Wheat Seedlings. (G.—100.) By J. F. Breazeale. Pp. 379–416, pl. 1, figs. 12. Price, 10 cents.

**NOTE.**—Beginning with Volume 5, The Journal of Agricultural Research will be issued weekly and distributed free *only* to the libraries of agricultural colleges and experiment stations, to large universities, technical schools, and such institutions as make suitable exchanges with the department. *It will not be sent free to individuals.* The Superintendent of Documents will receive subscriptions for this publication, the price being \$3 per year, 52 numbers.

**The Monthly Crop Report.** Vol. 2, No. 11, November, 1916. Pp. 109–120. (**Bureau of Crop Estimates.**)

Contains data relating to agriculture, including estimates of acreage, conditions, yield, prices, and value of crops and live stock. For free distribution.

## SERVICE AND REGULATORY ANNOUNCEMENTS—FOR SALE ONLY.

**1** These contain *only* information, instructions, and notices governing the enforcement of food and drugs act, meat inspection, 28-hour and quarantine laws, and the various regulations of the department. Issued monthly by certain bureaus. *Free distribution* is limited to persons in the employ of the department, to public officials whose duties render it necessary for them to have such information, to journals especially concerned, and to manufacturers and firms whose business is affected by same. Others desiring copies are respectfully referred to the Superintendent of Documents, Government Printing Office, who has them for sale *only*, at prices noted.

**Bureau of Animal Industry.** No. 113. September, 1916. Pp. 77–88. Nov. 6, 1916. Price, 5 cents.

**Bureau of Biological Survey.** No. 13. Pp. 4. Nov. 20, 1916. Price, 5 cents.

**Bureau of Chemistry.** Supplement 20. [N. J. 4451–4500.] Pp. 719–810. Nov. 13, 1916. Price, 10 cents.

**Federal Horticultural Board.** No. 32. September, 1916. Pp. 103–129. Nov. 16, 1916. Price, 5 cents.

**Federal Horticultural Board.** No. 33. October, 1916. Pp. 131–140. [Nov. 23, 1916.] Price, 5 cents.

**Office of Markets and Rural Organization.** No. 14. Pp. 34. Nov. 20, 1916. Price, 5 cents.

### SOIL SURVEYS.

**1** All requests for soil surveys are referred to the Bureau of Soils for attention, the distribution of same being controlled by that bureau.

**Field Operations of the Bureau of Soils, 1913 (Fifteenth Report.)** By Milton Whitney, Chief. With accompanying papers by assistants in charge of field parties. Pp. 2438, pls. 43, figs. 62, maps 54 (in case). Price, \$6.65.

For distribution also by Senators, Representatives, and Delegates in Congress.

**Soil Survey of Dickey County, North Dakota.** By T. M. Bushnell, In Charge, E. H. Smies, and W. I. Watkins, of the U. S. Department of Agriculture, and A. C. Anderson, Melvin Thomas, Murray E. Stebbins, R. C. Doneghue, and J. W. Ince, of the North Dakota Agricultural Experiment Station. Pp. 56, fig. 1, map. (From F. O. Soils, 1914.) Price, 15 cents.

### PUBLICATIONS OF THE WEATHER BUREAU.

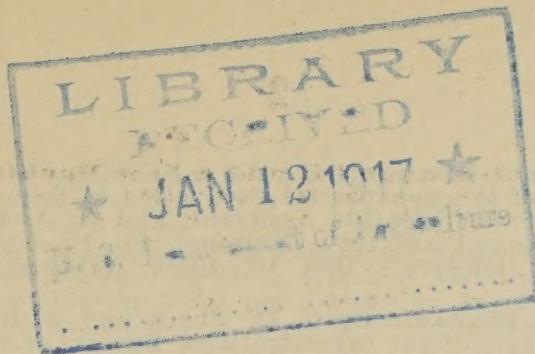
**1** Publications of the Weather Bureau are obtainable only from the Chief of the Weather Bureau or the Superintendent of Documents, Government Printing Office, at the prices noted herein.

**Monthly Weather Review.** (For sale only.) Vol. 44, No. 8. August, 1916. Pp. 431–498, charts 9, figs. 19. Price, 25 cents a copy, \$2.50 a year. Payable to the Superintendent of Documents.

Special Articles: Solar and sky radiation measurements during August, 1916. By H. H. Kimball.—High haze over the southwestern United States, July to September, 1916. By H. H. Kimball.—Atmospheric refraction at Mount Hamilton, Cal. By W. G. Reed.—Abnormal propagation of sound waves in the atmosphere. By S. Fujishima.—Auroras observed during August, 1916.—Distribution of precipitation in China during the typhoons of the summer of 1911. By Co-Ching Chu.—Radiation equilibrium and atmospheric radiation. By R. Emden.—Tornado in Utah. By Arthur W. Stevens.—Government safety-first train. By R. H. Finch.—Tower cloud at San Juan, P. R. By F. E. Hartwell.—Extension of U. S. Weather Bureau Service. By C. C. Clark.

**National Weather and Crop Bulletin,** No. 30, October, 1916 reporting temperature, rainfall, and crop conditions throughout the United States. (Issued weekly, on Wednesday, April to October; monthly remainder of year.) Price, 25 cents a year.

Jos. A. ARNOLD,  
*Editor and Chief, Division of Publications.*



This circular will be sent regularly to all who apply for it.

## United States Department of Agriculture,

WASHINGTON, D. C., December 30, 1916.

### MONTHLY LIST OF PUBLICATIONS.

[DECEMBER, 1916.]

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#### FARMERS' BULLETINS—FOR FREE DISTRIBUTION.

**Note.**—The department's supply of the current numbers of Farmers' Bulletins is ordinarily sufficient to make it possible to send them free to all applicants. They are also for sale at 5 cents per copy.

**Grasshopper Control in Relation to Cereal and Forage Crops.** By W. R. Walton, Entomological Assistant, Cereal and Forage Insect Investigations. Pp. 20, figs. 21. Contribution from the Bureau of Entomology. (**Farmers' Bulletin 747.**)

**Growing Grain on Southern Idaho Dry Farms.** By L. C. Aicher, Assistant Agronomist, Office of Cereal Investigations. Pp. 23, figs. 9. Contribution from the Bureau of Plant Industry. (**Farmers' Bulletin 769.**)

Of especial interest to those engaged in dry-land farming in this State.

**Homemade Fireless Cookers and Their Use.** Prepared in the Office of the Home Economics. Pp. 16, figs. 5. Contribution from the States Relations Service. December, 1916. (**Farmers' Bulletin 771.**)

**Control of the Sugar-Beet Nematode.** By Harry B. Shaw, Pathological Inspector, Federal Horticultural Board; formerly Assistant Pathologist, Office of Sugar Plant Investigations. Pp. 19, figs. 6. Contribution from the Bureau of Plant Industry. December, 1916. (**Farmers' Bulletin 772.**)

**Corn Growing Under Droughty Conditions.** By C. P. Hartley, Physiologist in Charge, and L. L. Zook, Physiologist, Office of Corn Investigations. Pp. 24, figs. 15. Contribution from the Bureau of Plant Industry. December, 1916. (**Farmers' Bulletin 773.**)

**Growing Cherries East of the Rocky Mountains.** By H. P. Gould, Pomologist in Charge of Fruit-Production Investigations. Pp. 37, figs. 29. Contribution from the Bureau of Plant Industry. December, 1916. (**Farmers' Bulletin 776.**)

**Castration of Young Pigs.** By Frank G. Ashbrook, Junior Animal Husbandman, Animal Husbandry Division. Pp. 6, fig. 6. Contribution from the Bureau of Animal Industry. (**Farmers' Bulletin 780.**)

**Sea Island Cotton.** By W. A. Orton, Pathologist in Charge of Cotton and Truck Disease Investigations. Pp. 40, figs. 13. Contribution from the Bureau of Plant Industry. Dec. 30, 1916. (**Farmers' Bulletin 787.**)

#### DEPARTMENT BULLETINS—TECHNICAL.

The publications listed below are technical or scientific treatises or bulletins applying to a special industry or locality. The edition is limited, but they will be furnished free to persons who can use such specialized information as long as the supply lasts. However, to insure prompt receipt, remit price to the Superintendent of Documents.

**The Dock False-Worm: An Apple Pest.** By E. J. Newcomer, Scientific Assistant, Deciduous Fruit Insect Investigations. Pp. 40, pls. 2, figs. 6. Contribution from the Bureau of Entomology. (Professional Paper.) Dec. 29, 1916. (**Department Bulletin 265.**) Price, 10 cents.

**The Production of Sweet-Orange Oil and a New Machine for Peeling Citrus Fruits.** Possibility of the Commercial Production of Sweet-Orange Oil from Waste Oranges. By S. C. Hood, Scientific Assistant, and G. A. Russell, Expert, of Office Drug-Plant and Poisonous-Plant Investigations. Pp. 19, figs. 10. Contribution from the Bureau of Plant Industry. Dec. 16, 1916. (**Department Bulletin 399.**) Price, 5 cents.

**Lupines as Poisonous Plants.** By C. D. Marsh and A. B. Clawson, Physiologists, Drug-Plant and Poisonous-Plant Investigations, Bureau of Plant Industry, and Hadleigh Marsh, Veterinary Inspector, Bureau of Animal Industry. Pp. 45, pls. 4, fig. 1. Contribution from the Bureau of Plant Industry and the Bureau of Animal Industry. (Professional Paper.) Dec. 5, 1916. (**Department Bulletin 405.**) Price, 10 cents.

**Convict Labor for Road Work.** By J. E. Pennybacker, Chief, Division of Road Economics, and H. S. Fairbank, Highway Engineer, Office of Public Roads and Rural Engineering, and Dr. W. F. Draper, Passed Assistant Surgeon, U. S. Public Health Service. Pp. 218, pls. 14, figs. 10. Contribution from the Office of Public Roads and Rural Engineering. (Professional Paper.) Dec. 15, 1916. (**Department Bulletin 414.**) Price, 40 cents.

Intended for use of State officials in charge of road work. No copies available for free distribution.

**Sugar Pine.** By Louis T. Larsen, Forest Examiner, and T. D. Woodbury, Assistant District Forester. Pp. 40, pls. 10. Contribution from the Forest Service. (Professional Paper.) Dec. 30, 1916. (**Department Bulletin 426.**) Price, 15 cents.

**The Spike-Horned Leaf Miner, An Enemy of Grains and Grasses.** By Philip Luginbill and T. D. Urbahns, Entomological Assistants, Cereal and Forage Insect Investigations. Pp. 20, pls. 2, fig. 1. Contribution from the Bureau of Entomology. (Professional Paper.) Dec. 13, 1916. (**Department Bulletin 432.**) Price, 5 cents.

**The Pear Leaf-Worm.** By R. L. Nongaret, Entomological Assistant, and W. M. Davidson and E. J. Newcomer, Scientific Assistants, Deciduous Fruit Insect Investigations. Pp. 24, pls. 2, figs. 4. Contribution from the Bureau of Entomology. (Professional Paper.) Dec. 11, 1916. (**Department Bulletin 438.**) Price, 5 cents.

**The Soy Bean, With Special Reference to Its Utilization for Oil, Cake, and Other Products.** By C. V. Piper, Agrostologist in Charge, and W. J. Morse, Scientific Assistant, Forage-Crop Investigations. Pp. 20, figs. 3. Contribution from the Bureau of Plant Industry. Dec. 22, 1916. (**Department Bulletin 439.**) Price, 5 cents.

**Improvement of Ghirka Spring Wheat in Yield and Quality.** By J. Allen Clark, Scientific Assistant in Western Wheat Investigations, Office of Cereal Investigations. Pp. 20, figs. 17. Contribution from the Bureau of Plant Industry. (Professional Paper.) Dec. 4, 1916. (**Department Bulletin 450.**) Price, 5 cents.

**The Chemical Composition of Lime-Sulphur Animal Dips.** By Robert M. Chapin, Senior Biochemist, Biochemic Division. Pp. 16. Contribution from the Bureau of Animal Industry. (Professional Paper.) Dec. 14, 1916. (**Department Bulletin 451.**) Price, 5 cents.

**The Chemical Composition of American Grapes Grown in the Central and Eastern States.** By William B. Alwood, Enological Chemist, in collaboration with B. G. Hartmann, J. R. Eoff, S. F. Sherwood, J. O. Carrero, and T. S. Harding. Pp. 20. Contribution from the Bureau of Chemistry. (Professional Paper.) Dec. 18, 1916. (**Department Bulletin 452.**) Price, 5 cents.

**The Effect of Cultural and Climatic Conditions on the Yield and Quality of Peppermint Oil.** By Frank Rabak, Chemical Biologist, Drug-Plant and Poisonous-Plant Investigations. Pp. 16. Contribution from the Bureau of Plant Industry. (Professional Paper.) Dec. 9, 1916. (**Department Bulletin 454.**) Price, 5 cents.

**The Drying for Milling Purposes of Damp and Garlicky Wheat.** By J. H. Cox, Assistant in Charge of the United States Grain-Standardization Laboratory at Baltimore, Md. Pp. 11, figs. 3. Contribution from the Bureau of Plant Industry. (Professional Paper.) Dec. 2, 1916. (**Department Bulletin 455.**) Price, 5 cents.

**The Use of Energy Values in the Computation of Rations for Farm Animals.** (A Revision of Farmers' Bulletin 346.) By Henry Prentiss Armsby, Director of the Institute of Animal Nutrition of the Pennsylvania State College; Expert in Animal Nutrition, Bureau of Animal Industry. Pp. 31. Contribution from the Bureau of Animal Industry. Dec. 15, 1916. (**Department Bulletin 459.**) Price, 5 cents.

**Lessons on Poultry for Rural Schools.** By F. E. Heald, Specialist in Agricultural Education. Pp. 34, figs. 13. Contribution from the States Relations Service. (Professional Paper.) Dec. 30, 1916. (**Department Bulletin 464.**) Price, 10 cents.

**The Food Value and Uses of Poultry.** By Helen W. Atwater, Scientific Assistant, Office of Home Economics. Pp. 29, figs. 2. Contribution from the States Relations Service. (Professional Paper.) Dec. 29, 1916. (**Department Bulletin 467.**) Price, 5 cents.

**Fats and Their Economical Use in the Home.** By A. D. Holmes and H. L. Lang, Scientific Assistants, Office of Home Economics. Pp. 27. Contribution from the States Relations Service. (Professional Paper.) Dec. 15, 1916. (**Department Bulletin 469.**) Price, 5 cents.

**Studies on the Digestibility of the Grain Sorghums.** By C. F. Langworthy, Chief, and A. D. Holmes, Scientific Assistant, Office of Home Economics. Pp. 31. Contribution from the States Relations Service. (Professional Paper.) Dec. 22, 1916. (**Department Bulletin 470.**) Price, 5 cents.

**The Origin, Characteristics, and Quality of Humpback Wheat.** By Levi M. Thomas, Assistant in Charge of the United States Grain-Standardization Laboratory at Fargo, N. Dak. Pp. 4, pl. 1, fig. 1. Contribution from the Bureau of Plant Industry and the Office of Markets and Rural Organization. Dec. 30, 1916. (**Department Bulletin 478.**) Price, 5 cents.

**A Survey of Beekeeping in North Carolina.** By E. G. Carr, Specialist in Bee-keeping. Pp. 16. Contribution from the Bureau of Entomology. Dec. 2, 1916. (**Department Bulletin 489.**) Price, 5 cents.

**Table for Converting Weights of Mechanical Separations into Percentages of the Sample Analyzed.** By E. G. Boerner, Assistant in Grain Standardization. Pp. 21, figs. 2. Contribution from the Bureau of Plant Industry and the Office of Markets and Rural Organization. Dec. 28, 1916. (**Department Bulletin 516.**) Price, 5 cents.

#### MISCELLANEOUS.

**Report of the Alaska Agricultural Experiment Stations, 1915.** Pp. 100, pls. 19. Price, 15 cents.

**Phosphate Fertilizers for Hawaiian Soils, and Their Availability.** By Wm. T. McGeorge, Former Chemist. Pp. 45, pls. 4. Dec. 2, 1916. (**Bulletin 41, Hawaii Agricultural Experiment Station.**) Price, 10 cents.

**Measuring Hay in Ricks or Stacks.** By H. B. McClure, Agriculturist, and W. J. Spillman, Chief. Pp. 10, figs. 4. Contribution from the Office of Farm Management, Office of the Secretary. Dec. 9, 1916. (**Circular 67, Office of the Secretary.**) Price, 5 cents.

**Improved Apparatus for Use in Making Acidity Determinations of Corn.** By H. J. Besley and G. H. Baston, Assistants, Office of Grain Standardization. Pp. 4, fig. 1. Dec. 30, 1916. (**Circular 68, Office of the Secretary.**) Price, 5 cents.

#### SERIALS.

**Journal of Agricultural Research.** (For sale only.) Vol. 7, No. 10, Dec. 4, 1916. Contents: Nitrification in Semiarid Soil. (gi Cal.—7.) By W. P. Kelley.—Factors Affecting the Evaporation of Moisture from the Soil. (gi Utah—4.) By F. S. Harris and J. S. Robinson. Pp. 417—461, figs. 17. Price, 10 cents.

**Same,** Vol. 7, No. 11. Dec. 11, 1916. Contents: Macrosiphum granarium, the English Grain Aphid. (gk K—47.) By W. J. Phillips.—A Specific Mosaic Disease in Nicotiana viscosum Distinct from the Mosaic Disease of Tobacco. (gl G—101.) By H. A. Allard.—Syntomaspis druparum, the Apple-Seed Chalcid. (go K—47.) By R. A. Cushman. Pp. 463—502, pls. 9, figs. 9. Price, 20 cents.

**Same,** Vol. 7, No. 12. Dec. 18, 1916. Contents: Assimilation of Iron by Rice from Certain Nutrient Solutions. (gm B—12.) By P. L. Gile and J. O. Carrero.—Influence of Bordeaux Mixture on the Rates of Transpiration from Abscised Leaves and from Potted Plants. (gn N. J.—4.) By William H. Martin. Pp. 503—548. Price, 10 cents.

NOTE.—Number 13 of this volume will be the index to the volume (the volumes consisting of 13 numbers in the future instead of 26 numbers, as now issued), and will not be issued for some time owing to that fact.

**Same,** Vol. 6, No. 26. Contents and Index of Volume 6. April 3, 1916—September 25, 1916. Pp. xxvi—1047—1060. Price, 10 cents.

**Experiment Station Record.** Vol. XXXV, No. 6. Abstract Number. Dec. 8, 1916. E. W. Allen, Ph. D., Editor. Pp. 501—600. Price, 15 cents.

**Same,** Vol. XXXV, No. 7. November, 1916. Pp. 601—700. Price, 15 cents.

NOTE.—The Record is a technical review of the world's scientific literature pertaining to agriculture. It is not intended for general distribution, and its free distribution is restricted to persons connected with the agricultural colleges, experiment stations, and similar institutions, and to libraries and exchanges. It can not be sent free to individuals having no official connection with public institutions. The Superintendent of Documents will receive subscriptions for this publication, which is issued in two volumes a year, ten numbers each, at \$1 a volume.

**The Monthly Crop Report.** Vol. 2, No. 12. December, 1916. Pp. 121—140. (Bureau of Crop Estimates.)

Contains data relating to agriculture, including estimates of acreage, conditions, yield, prices, and value of crops and live stock, and crop summary for 1916. For free distribution.

#### SERVICE AND REGULATORY ANNOUNCEMENTS—FOR SALE ONLY.

These contain *only* information, instructions, and notices governing the enforcement of food and drugs act, meat inspection, 28-hour and quarantine laws, and the various regulations of the department. Issued monthly by certain bureaus. Free distribution is limited to persons in the employ of the department, to public officials whose duties render it necessary for them to have such information, to journals especially concerned, and to manufacturers and firms whose business is affected by same. Others desiring copies are respectfully referred to the Superintendent of Documents, Government Printing Office, who has them for sale *only*, at prices noted.

**Bureau of Animal Industry.** No. 115. November, 1916. Pp. 97—104. Dec. 26, 1916. Price, 5 cents.

**Federal Horticultural Board.** No. 34. November, 1916. Pp. 141—151. Dec. 19, 1916. Price, 5 cents.

**Office of Markets and Rural Organization.** No. 16. Dec. 16, 1916. Pp. 15. Price, 5 cents.

**Office of Markets and Rural Organization.** No. 17. Pp. 33. Dec. 21, 1916. Price, 5 cents.

#### SOIL SURVEYS.

All requests for soil surveys are referred to the Bureau of Soils for attention, the distribution of same being controlled by that bureau.

**Soil Survey of Clay County, Alabama.** By Arthur E. Taylor and E. S. Vanatta, of the U. S. Department of Agriculture, and N. Eric Bell and J. L. Andress, of the Alabama Department of Agriculture and Industries. Pp. 41, fig. 1, map. (**From F. O. Soils, 1915.**) Price, 15 cents.

**Soil Survey of the Ukiah Area, California.** By E. B. Watson, of the U. S. Department of Agriculture, In Charge, and R. L. Pendleton, of the University of California. Pp. 53, pls. 5, figs. 2, map. (**From F. O. Soils, 1914.**) Price, 15 cents.

**Soil Survey of Washington County, Georgia.** By R. A. Winston, In Charge, J. H. Agee, J. A. Kerr, and M. Earl Carr. Pp. 39, fig. 1, map. (**From F. O. Soils, 1915.**) Price, 15 cents.

**Soil Survey of Wilkes County, Georgia.** By David D. Long, of the Georgia State College of Agriculture. Pp. 35, fig. 1, map. (**From F. O. Soils, 1915.**) Price, 15 cents.

**Soil Survey of Coahoma County, Mississippi.** By F. Z. Hutton, In Charge, W. E. Tharp, N. M. Kirk, and H. W. Hawker, of the U. S. Department of Agriculture, and E. M. Jones, of the Mississippi Geological Survey. Pp. 29, fig. 1, map. (**From F. O. Soils, 1915.**) Price, 15 cents.

#### PUBLICATIONS OF THE WEATHER BUREAU.

Publications of the Weather Bureau are obtainable only from the Chief of the Weather Bureau or the Superintendent of Documents, Government Printing Office, at the prices noted herein.

**Monthly Weather Review.** (For sale only.) Vol. 44, No. 9. September, 1916. Dec. 1, 1916. Pp. 499-545, charts 10, figs. 6. Price, 25 cents per copy, \$2.50 a year. Payable to the Superintendent of Documents.

Special Articles: Solar and sky radiation measurements during September, 1916. By H. H. Kimball.—Shading effect of wire insect cages. By H. H. Kimball.—Circumzenithal arc with black band. By H. H. Martin.—Atmospheric electrical variations at sunset and sunrise. By E. H. Nichols.—Ionization of the upper atmosphere. By W. F. G. Swann.—Ground rainbows. By A. E. Heath.—Temperature and radiation of the sun. By F. Biscoe.—Solar corpuscular rays. By K. Birkeland.—Aurora of September 30, 1916.—Probable growing season. By W. G. Reed.—Certain characteristics of the winds at Mount Tamalpais. By H. H. Wright.—Newtonian constant of gravitation as affected by temperature. By P. E. Shaw.—Kata thermometer as a measure of the effects of atmospheric conditions on bodily comfort. By C. E. A. Winslow.—Ball lightning on Puy de Dôme. By E. Mathias.

**Monthly Weather Review.** (For sale only.) Supplement No. 3. Aerology No. 1. Dec. 1, 1916. Pp. 67, figs. 23. Price, 25 cents.

Special Articles: Sounding Balloon Ascensions at Fort Omaha, Nebr., May 8, 1915.—Meteorological Observations on Board the U. S. C. G. Cutter "Seneca," April—July, 1915.—Drexel Aerological Station.—Free-Air Data at Drexel Aerological Station, October, November, and December, 1915.

**Climatological Data for the United States by sections.** Vol. 3, No. 10. October, 1916. Pp. 220, maps, 2. 4°. Price, 35 cents, \$4.00 a year.

**National Weather and Crop Bulletin,** No. 31, November, 1916, reporting temperature, rainfall, and crop conditions throughout the United States. (Issued weekly, on Wednesday, April to October; monthly remainder of year.) Price, 25 cents a year.

**Snow and Ice Bulletins** for Dec. 5, 12, 19, 26, 1916. These bulletins are issued weekly during the winter season, based upon data from regular Weather Bureau stations, supplemented by reports from selected cooperative observers. Price, 25 cents a year.

Jos. A. ARNOLD,  
*Editor and Chief, Division of Publications.*